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# Part I: Co-operation and Association

## BRITISH INDIA.

### CO-OPERATIVE AGRICULTURAL CREDIT IN INDIA IN 1909-10 AND 1910-11.

#### CHAPTER II.

##### CENTRAL ORGANISATIONS OF CREDIT SOCIETIES.

In the previous Chapter(I) we have traced the progress of the rural co-operative credit societies in British India during the two years 1909-10 and 1910-11. We have now to study the central organisations of credit societies.

These organisations are of two kinds. On the one hand we find societies for the purpose of making advances to local societies; on the other hand, federations of societies formed for the discussion of subjects common interest, to aid in the work of supervision and, in some cases, link the member-societies together for the purpose of mutually guaranteeing the loans which they have separately obtained. It will be convenient to refer to the central financing agencies as "central banks," though this term is not much used in the official reports; for the federations we shall employ the term "union," which is the name officially given them.

#### § 1. CENTRAL BANKS.

The Registrar's Reports refer to two different kinds of central financing agency — "central societies" and "district banks." Statistics are given separately for "central societies" and these are defined in the 1 of statistics (which is common to all the provinces) as "societies lending to other societies only." A study of the Reports, however, shows that this definition is not always adhered to, and that there is a complete absence of uniformity in regard to the societies included under the term. One Registrar, for example, classes as "central societies" a society which has made an advance to any other society; another, in his 1909-10 Report, went to the opposite extreme, and declared that there was no central society in his Province, although there were two societies which conformed strictly to the definition. Between these extremes there is considerable variety of practice.

(1) See *Bulletin of Economic and Social Intelligence*, December 1912, page 19. The sources used for the previous Chapter have served also in the completion of the present one.

A similar want of uniformity is apparent in regard to "district banks." It seems to be intended by the Registrars who employ the classification that the term shall include societies which make it an essential part of their business to deal with other societies as well as with individual members, but it is not easy to see what standard has been adopted in distinguishing between such societies and the societies which, while lending principally to individual members, incidentally make advances also to societies.

It will be seen, therefore, that, owing to this want of uniformity in the official statistics of "central societies" and "district banks" has much of their value. We have, accordingly, endeavoured by analysing the official statistics and classifying the societies differently, to compile other tables which will throw a clearer light upon the extent to which central agencies have been developed in India for financing local credit societies.

We have divided the societies into four classes, viz.,

- (1) Societies lending exclusively to other societies ;
- (2) Societies lending principally, but not exclusively, to other societies ;
- (3) Societies lending principally to individual members, but lending also to societies ;
- (4) Societies lending exclusively to individual members.

With the last-named we are not here concerned. The first two classes we shall study in detail, referring to them jointly as "central banks." Class (3) we must also consider to some extent.

In deciding what societies shall be classed as dealing principally with other societies, regard has been had both to the loans granted during the year and to the loans outstanding at the end of the year. A society, for example, which granted during the year a slightly larger amount of loans to societies than to individual members, but had at the end of the year a considerably larger amount outstanding in loans to individual members than in loans to societies, would be classed as "lending principally to individual members." For each of the two years under review the classification has been separately made, and this has involved transferring societies in some cases from one class to another.

The difficulty of re-arranging the statistics has been increased by the fact that there exists also amongst the Reports some slight divergence of practice as to the method of entering certain items in the Table. This becomes apparent if we compare the totals which ought to correspond. Thus, for example, if we add together the "loans granted to other societies" by all classes of societies ("central," "urban" and "rural") the total should be the same as the total of the "loans received from other societies" by all classes of societies. Between the two totals there is, however, in the Statistics for 1909-10 a discrepancy of 1,11,128 rupees (1), and in the 1910-11 Statistics a discrepancy of 81,947 rupees

(1) A rupee is equal to 15. 4d. or 1 fr.68. The figures are divided so as to indicate the number of lakhs, a lakh being 100,000 rupees.

ilar discrepancies may be remarked in the other totals which ought correspond.

These discrepancies may arise in various ways, and we have found it impossible to eliminate them. Thus a loan from a central society to a society which is a member may appear under the heading "loans to members" in the statistics of the central society and under the heading "loans from other societies" in the statistics of the local society. Similarly a deposit by a local society in a central society of which it is a member may appear under "loans to other societies" or, perhaps, under "investments" or even, possibly, under "other items" in one table while in another table it appears under "deposits from members."

Our chief object being to study the extent to which local societies are controlled by central banks, we have always transferred items under the heading "loans to members" to the column "loans to other societies" in it was clear that they referred to loans from a central bank to societies which were members of it. This is easily done where the central banks are known to be composed exclusively of local societies, but in the case of societies composed both of societies and of individual members, it is impossible to distinguish. If the practice exists, in such cases, of entering loans to member-societies under the heading "loans to members," it may have given rise to some errors in our classification, which are based on the relation between the loans to societies and the loans to individuals.

Items under the heading "deposits from members" we have not attempted to transfer, even when it appeared that they were really deposits made by local societies in central banks.

We will first describe the central banks existing in each Province, stating the extent of their transactions with local societies, and will then give Summary Tables relating to all the Provinces.

In making our calculations we have suppressed the fractions of a per cent, but, where possible, have availed ourselves of the official totals. This has occasioned some discrepancies in our Tables, which are small in the Tables relating to separate provinces, but become somewhat larger in the aggregate Tables.

#### (a) *Madras.*

There were in the Province of Madras three societies classed by the Registrar as "central societies" in 1909-10. One of these, the Kulit District Urban Bank (known subsequently as the Trichinopoly District Bank) lent exclusively to other societies. The other two, the Madras Central Urban Bank and the Salem District Urban Bank, dealt principally, but not exclusively, with other societies.

In 1910-11, two other central banks were formed, the Coimbatore District Bank and the Tenali District Bank. The Coimbatore District Bank belongs to our second class of central banks, and we have assigned the Tenali Bank to the same class, although, as it had not granted any loans before the end of the official year, the classification is arbitrary.



All these societies appear to be composed exclusively of individual members.

The following Table shows the loans granted by all societies in the Province to other societies, the figures being given separately for each of the central banks.

TABLE I. — *Madras: Loans by Societies to other Societies.*

	Loans to other Societies			
	Granted 1909-10 —	Outstanding July 1st., 1910	Granted 1910-11 —	Outstanding July 1st. 11
	Rs.	Rs.	Rs.	Rs.
<i>Societies lending exclusively to other Societies:</i>				
Trichinopoly District Bank . .	67,400	67,050	1,44,760	2,00,560
Total . . .	67,400	67,050	1,44,760	2,00,560
<i>Societies lending principally but not exclusively to other Societies</i>				
Madras Central Urban Bank . .	5,58,050	9,06,200	8,16,550	14,15,700
Salem District Bank . . . . .	1,73,000	3,49,740	64,533	3,09,880
Coimbatore District Bank . . .	—	—	99,300	88
Tenali District Bank . . . . .	—	—	—	—
Total . . .	7,31,050	12,55,940	9,80,383	18,11
<i>Societies lending principally to individual members</i>				
Urban Societies . . . . .	9,900	5,050	29,840	6
Rural Societies . . . . .	15,435	9,785	24,744	14
Total . . .	25,335	14,835	54,584	20

It will be noted that in this Table, and in the corresponding Table for other Provinces, the figures relate to two different classes of loans — (1) Advances made to local societies to provide them with working capital, and (2) Loans made by local societies as a means of investing surplus funds. It may, however, be taken that the loans made by central banks are practically all of the first class. We shall see, further, when we come to consider the aggregate figures, that the local societies do not to any large extent, hand over their surplus funds to the central banks and that consequently many of the loans advanced by local societies to "other societies" partake of the character of both kinds of loans; that is, they are surplus funds invested in making advances direct to other local societies without the intervention of a central bank.

(b) *Bombay.*

Of the seven societies classed by the Registrar for Bombay as "co-operative societies" in 1909-10 and 1910-11 only two, the Pardi District Bank and the Bombay Urban Bank, lent exclusively to other societies. The District Bank lent principally to other societies, but the remaining three, the Broach District Bank, the Dhulia Taluka District Bank, the Bern Marátha District Bank and the Nagar Central Bank, dealt principally with individual members.

As in Madras, all these societies were composed of individual members. The following Table shows the "loans to other societies" made by Bombay societies of all classes:

TABLE II.—*Bombay: Loans by Societies to Other Societies.*

	Loans to other Societies			
	Granted 1909-10	Outstanding July 1st., 1910	Granted 1910-11	Outstanding July 1st., 1911
	Rs.	Rs.	Rs.	Rs.
<i>Societies lending exclusively to other Societies.</i>				
Pardi District Bank . . . . .	—	610	21	601
Bombay Urban . . . . .	—	11,384	—	9,384
Total . . .	—	11,994	16,350	9,985
<i>Societies lending principally, but not exclusively, to other Societies</i>				
District Bank . . . . .	15,550	14,550	16,350	21,350
Total . . .	15,550	14,550	16,350	21,350
<i>Societies lending principally to individual members.</i>				
Pardi District Bank . . . . .	—	2,000	7,500	3,150
Dhulia Taluka District Bank . .	—	350	—	300
Nagar Central Bank . . . . .	—	—	10,300	8,550
Bern Marátha District Bank . .	6,000	19,200	21,700	37,377
Bombay Urban Societies . . . . .	1,200	2,225	—	1,000
Other Societies . . . . .	98	650	—	920
Total . . .	22,848	24,425	39,500	51,297

(c) *Bengal.*

The Registrar for Bengal follows strictly the official definition "central societies" and all the societies which he so classes lend exclusively to other societies.

In 1909-10 there were four such societies — the Khelar-Balarang Union, the Raruli Union, the Rohika Union and the Banki-Domp Union. All these were purely federal in form, being composed exclusively of societies and having no individual members. In 1910-11 four other societies of the same type were added — the Rampurhat Union and the Kalimpong Union.

In the same year, however, two central societies of a different type were formed. These were the Nawada Union and the Ranchi Union, each of which contains individual preference shareholders as well as society-members.

Speaking of the two different types of central society, the Registrar wrote in his 1910-11 Report: "Fundamentally, they are identical, they differ only in one or two important details of machinery and administration. The idea is very simple. To achieve the ideal of an autonomous and self-contained movement it is necessary that the societies should provide for their own finance and control and that development should be as far as possible automatic. Therefore, just as individuals join together to form a village society, so the societies of a particular area are encouraged to form a Central Banking Union, the object of which is to develop the movement in that area and to finance and supervise its affiliated societies. The Union differs from the village society in that it is formed on a share basis and that the liability of its members is limited. Both types of Unions, which may be described as pure and modified Unions, are built on these lines. The distinction is that, whereas in the former only affiliated societies are admitted as shareholders and the management is conducted entirely by the representatives of such societies, in the modified Union individual preference shareholders are admitted partly to furnish capital, but chiefly to provide a business-like element in the management. Most of the registered Unions fall under the former category. The second type was devised to suit the conditions of the more backward areas. But its preference shareholders are regarded only as a temporary assistance, to be gradually dispensed with as the societies develop a capacity for independent management."

The following is the Table showing the loans by societies to other societies in Bengal:

TABLE III. — Bengal: Loans by Societies to Other Societies.

	Loans to other Societies			
	Granted 1909-10	Outstanding July 1st., 1910	Granted 1910-11	Outstanding July 1st., 1911
	Rs.	Rs.	Rs.	Rs.
<i>Societies lending exclusively to other Societies.</i>				
Barabampur Union . . .	8,445	8,645	13,690	19,608
Chit Union . . . . .	31,200	29,200	19,250	34,543
Ka Union . . . . .	55,203	55,203	—	43,256
Si-Dompara Union . . . .	—	—	44,900	43,468
Surhat Union . . . . .	—	—	300	—
Sompong Union . . . . .	—	—	1,000	1,000
Sada Union . . . . .	—	—	15,600	15,600
Shi Union . . . . .	—	—	11,073	11,864
Total . . .	94,848	93,048	1,05,813	1,69,340
<i>Societies lending principally to individuals.</i>				
in Societies . . . . .	—	—	—	—
al Societies . . . . .	650	1,110	5,724	5,834
Total . . .	650	1,110	5,724	5,834

## (d) United Provinces.

In the United Provinces, the Registrar distinguishes between "central societies" and "district banks." The former comply strictly with official definition and so fall within our first class of central banks. Amongst the latter, however, are some which lend more largely to individuals than to societies and so are not here considered as central banks. In 1909-10 there were three "central societies" in the United Provinces—the Mainpuri Central Bank, the Budaun Central Bank, and the Fyzabad Central Bank. In the following year the Fyzabad District Bank, having given up dealings with individual members, was classed as a "central society," and eight new "central societies" were formed. The constitution of these societies varies considerably. The Fatehpur

Bank has no shares at all, and the profit all goes to reserve. The Mainpuri and Fyzabad Banks have both individuals and societies as members. In Budaun Bank, the ordinary shares are held by societies and the preference shares by individuals. Of the "central societies" formed in 1911, those of Dalelnagar, Kurwar, Jagdishpur, Amethi and Tanda, composed solely of societies, while those of Kara, Salon and Bilgram had individuals as well as societies as shareholders.

The societies classed as "district banks" in 1909-10 were those of Bulandshahr, Jahangirabad, Moradabad, Jalaun, Kashi, Jaunpur, Gorakhpur, Kasia, Basti, Mohanlalganj, Unao, Rae Bareilly, Hardoi, Sandi and Fyzabad — fifteen in all. The transference of Fyzabad in 1910 to the class of "central societies" reduced the number of "district banks" in that year to fourteen.

Amongst the "district banks" three — Jalaun, Kashi and Unao — were formed originally for the purpose of dealing with individual shareholders and independent societies. The others were formed to deal with individual shareholders and what the Registrar describes as "affiliated societies." These "affiliated societies" were not, however, separately registered and had no legal existence apart from the district banks. Loans to the so-called "affiliated societies" are really dealings with groups of individuals, and rightly appear in the returns under the heading "loans to members." It is only the loans to independent societies which appear under the heading "loans to societies." If, therefore, the loans to individual members and the loans to the "affiliated societies" together exceed the loans to independent societies, we have classed the bank as a "society lending principally to individuals." The following Table giving the loans to other societies by all classes of society in the United Provinces, indicates incidentally how we have classified the "district banks" in 1909-10 and 1910-11. The Kasia District Bank does not appear in the Table because it did not make any "loans to other societies" that is to say, it lent to its "affiliated societies," but not to independent societies.

TABLE IV. — United Provinces: Loans by Societies to other Societies.

	Loans to other Societies			
	Granted 1909-10	Outstanding July 1st, 1910	Granted 1910-11	Outstanding July 1st, 1911
	Rs.	Rs.	Rs.	Rs.
<i>Societies lending exclusively to other Societies.</i>				
Jaunpur District Bank . . . . .	50,222	35,382	83,125	59,956
Alam District Bank . . . . .	2,21,320	1,94,520	3,25,890	2,67,426
Meerut District Bank . . . . .	15,598	15,075	29,470	21,075
Meerut District Bank (1) . . . . .	—	—	34,690	46,792
Meerut Central Bank . . . . .	—	—	7,575	7,575
Meerut Central Bank . . . . .	—	—	15,651	13,786
Meerut Central Bank . . . . .	—	—	12,772	7,750
Meerut Central Bank . . . . .	—	—	14,093	9,917
Meerut Weavers' Central Bank . . . . .	—	—	4,745	3,775
Meerut Central Bank . . . . .	—	—	47,570	33,653
Meerut Central Bank . . . . .	—	—	—	8,545
Total . . . . .	2,87,140	2,44,977	5,75,581	4,80,250
<i>Societies lending principally, but not exclusively, to other societies.</i>				
Bandah District Bank . . . . .	42,635	49,477	1,53,134	1,23,129
Bandah (Benares) District Bank . . . . .	67,293	44,204	1,57,242	1,05,863
Bandah District Bank . . . . .	57,824	40,825	72,328	65,374
Bandah District Bank (2) . . . . .	—	—	70,460	36,159
Bandah District Bank (2) . . . . .	—	—	13,429	9,237
Bandah District Bank . . . . .	6,58,400	4,20,808	3,92,246	4,15,667
Bandah District Bank (2) . . . . .	—	—	1,00,668	69,479
Bandah District Bank . . . . .	36,745	22,081	75,830	48,635
Bandah (Hardoi) District Bank . . . . .	34,305	21,966	98,724	69,259
Bandah District Bank (3) . . . . .	20,670	29,971	—	—
Total . . . . .	9,17,872	6,29,392	11,34,061	9,42,832
<i>Societies lending principally to individuals.</i>				
Bandah District Bank . . . . .	2,122	2,122	3,373	3,163
Bandah District Bank . . . . .	40,096	53,056	71,784	81,783
Bandah District Bank . . . . .	7,245	8,434	12,693	11,023
Bandah District Bank . . . . .	—	5,000	—	5,000
Bandah District Bank (4) . . . . .	730	730	—	—
Bandah District Bank (4) . . . . .	2,874	1,790	—	—
Bandah District (4) . . . . .	45,381	30,560	—	—
Bandah urban societies . . . . .	3	—	40	—
Bandah societies . . . . .	32,994	12,381	37,850	24,061
Total . . . . .	1,31,445	1,14,073	1,25,740	1,25,030

(1) Included for 1909-10 amongst "Societies lending principally but not exclusively other Societies."

(2) Included for 1909-10 amongst "Societies lending principally to individuals."

(3) Included for 1910-11 amongst "Societies lending exclusively to other Societies."

(4) Included for 1910-11 amongst "Societies lending principally but not exclusively to other Societies."

A process of reorganisation is being carried out in the "district banks," with a view, firstly, to the elimination of the individual shareholders, and, secondly, to the substitution of registered rural societies for "affiliated societies." In 1909-10 the Banks of Bulandshahr, Jampur, Hardoi, Sandila and Fyzabad had all ceased to lend to "affiliated societies"; the last-named, as we have seen, ceased also in 1910-11 to lend with individuals.

(c) *Punjab.*

Two types of society lending exclusively to other societies exist in the Punjab. In 1909-10 there was one such society, the Madar District Bank, which consisted solely of societies as members. Six others consisted solely of individual members; these were the Jullundur District Bank, the Gurdaspur District Bank, the Gujrat District Bank, the Shah District Bank, the Jhelum District Bank and the Hoshiarpur District Bank.

In 1910-11 the Jhelum District Bank was divided into three societies, one of which retained the name of the parent society, while the other two were called respectively the Pind Dadan Khan District Bank and Chakwal District Bank. The new Jhelum District Bank and the Pind Dadan Khan District Bank continued to lend exclusively to other societies, but the Chakwal District Bank lent also to individual members though lending principally to societies.

Another society composed of local societies, the Talwandi Khan Union, was formed in 1910-11, but it started business so late that figures relating to its working are not included in the statistics for the year.

The following Table shows for Punjab the loans made by societies to other societies:

TABLE V. — Punjab: Loans by Societies to Other Societies.

	Loans to other Societies			
	Granted 1909-10	Outstanding July 1st, 1910	Granted 1910-11	Outstanding July 1st, 1911
	Rs.	Rs.	Rs.	Rs.
<i>Societies lending exclusively to other Societies.</i>				
Musur District Bank . . . .	72,849	1,30,918	2,03,740	2,57,149
Lasapur District Bank . . . .	87,534	82,701	1,13,926	1,69,040
At District Bank . . . . .	8,700	8,700	11,400	19,300
Upur District Bank . . . . .	13,800	13,800	26,500	40,294
Am District Bank . . . . .	12,950	12,406	2,131	5,906
Harpur District Bank . . . .	3,700	3,700	41,335	28,146
Dadan Khan District Bank.	—	—	3,460	7,150
ur Union . . . . .	28,525	27,375	88,057	1,02,591
andi Musar Khan Union . . .	—	—	—	—
Total . . . . .	2,28,058	2,79,600	4,90,549	6,29,576
<i>Societies lending principally, but exclusively, to other Societies.</i>				
awal District Bank . . . . .	—	—	16,280	18,350
Total . . . . .	—	—	16,280	18,350
<i>Societies lending principally to individuals.</i>				
an Societies . . . . .	2,000	2,000	—	2,005
al Societies . . . . .	1,47,446	1,44,369	2,97,897	3,66,944
Total . . . . .	1,49,446	1,46,369	2,97,897	3,68,949

It appears from this table that a large number of loans are granted rural societies to other societies. A glance at Table XV will show there is no evidence that these are to any large extent loans to central societies. We must conclude, therefore, that in the Punjab many loans are granted directly by local societies to other societies. It is possible amongst societies making such loans there are some which lend more largely to other societies than to individual members, but of this the local figures furnish no indication.



(f) *Burma.*

There was only one society in Burma in 1909-10 which lent exclusively to other societies. This was the Pakókku Central Urban Co-operative Bank. It was not flourishing and the Registrar insisted on dissolution or reorganisation. The latter course was chosen, and the business of the Bank substantially increased in 1910-11. In that year another central bank, the Upper Burma Central Urban Co-operative Bank, was formed and even in its first year it did a large business, making loans to the extent of nearly seven lakhs of rupees. This Bank started with a capital of 1,00,000 rupees, divided into shares of Rs. 100 each. 500 shares were allotted to individual residents of Burma and 500 were reserved for co-operative credit societies.

There do not appear to have been any societies in Burma lending principally but not exclusively to other societies, as will be seen from following Table :

TABLE VI. — *Burma: Loans by Societies to Other Societies.*

	Loans to other Societies			
	Granted 1909-10	Outstanding July 1st., 1910	Granted 1910-11	Outstanding July 1st., 1911
	Rs.	Rs.	Rs.	Rs.
<i>Societies lending exclusively to other Societies.</i>				
Pakókku Central Urban Co-op. Bank . . . . .	8,960	22,920	17,406	39,999
Upper Burma Central Urban Co-op. Bank. . . . .	—	—	6,81,360	6,45,338
Total . . .	8,960	22,920	6,98,766	6,85,337
<i>Societies lending principally to individuals.</i>				
Urban Societies . . . . .	3,600	6,750	10,950	13,699
Rural Societies . . . . .	—	—	314	314
Total . . .	3,600	6,750	10,364	13,994

(g) *Eastern Bengal and Assam.*

In his 1909-10 Report the Registrar for Eastern Bengal and Assam did not class any of the societies in the Province as "central societies". There were, however, two societies, *viz.*, the Pioneer Central Co-operative

bank and the Gauripur Co-operative Union, which lent money exclusively to other societies.

The latter is composed (the Registrar tells us) of four rural societies noted in close proximity to each other, every one of whom has undertaken joint and unlimited liability for the debts of the Union. The Union raises capital for the rural societies and keeps their accounts. The individual societies recruit members, issue loans and recover them. All the profits of the individual societies go to form the common Reserve Fund of the Union. The Union is under the administration of a Committee composed of the Chairmen of the rural societies and employs a paid Manager.

There were also in 1909-10, seven societies which we have classed as lending principally to other societies, viz., the Eastern Bengal and Assam Co-operative Central Bank, the Teota Co-operative Central Bank, the Jamulpur Co-operative Town Bank, the Sherpur Co-operative Town Bank, the Madaripur Co-operative Urban Bank, the Comilla Co-operative Town Bank, and the Bharenga Co-operative Urban Bank.

For 1910-11, we have transferred the Eastern Bengal and Assam Co-operative Central Bank to the class of societies lending exclusively to other societies, and the Mymensingh Co-operative Town Bank (which in 1909-10 lent more largely to individuals than to societies) to our second class of central banks.

We give for Eastern Bengal and Assam a Table similar to that which we have given for the other provinces :

TABLE VII. — *Eastern Bengal and Assam: Loans by Societies to other Societies*

	Loans to other Societies			
	Granted 1909-10	Outstanding July 1st, 1910	Granted 1910-11	Outstanding July 1st, 1911
	Rs.	Rs.	Rs.	Rs.
<i>Societies lending exclusively to other societies.</i>				
Gauripur Co-operative Union . .	1,629	1,589	438	1,71
Pioneer Co-operative Central Bank . . . . .	23,450	52,550	31,600	76,071
Eastern Bengal and Assam Co-op. Cent. Bank (1) . . . . .	—	—	29,000	38,800
Total . . .	25,079	54,139	61,038	1,16,773
<i>Societies lending principally, but not exclusively, to other Societies.</i>				
Eastern Bengal and Assam Co-op. Cent. Bank (2) . . . . .	14,300	14,300	—	—
Tota Co-operative Central Bank	670	4,678	2,600	7,120
Jamulpur Co-op. Town Bank . .	17,421	31,790	25,458	50,857
Mymensingh Co-op. Town Bank (3)	—	—	17,300	18,900
Sherpur Co-op. Town Bank . .	3,150	3,150	—	2,75
Madaripur Co-op. Urban Bank . .	7,724	13,305	27,599	28,721
Comilla Co-op. Town Bank . .	6,550	6,550	27,250	34,09
Bharenga Co-op. Urban Bank . .	6,300	6,750	10,050	13,05
Total . . .	56,115	80,523	1,10,257	1,54,45
<i>Societies lending principally to individuals.</i>				
Mymensingh Co-op. Town Bank (1)	1,900	1,900	—	—
Faridpur Co-op. Urban Bank . .	1,050	4,170	—	3,62
Pabna Co-op. Urban Bank . .	2,150	2,150	—	1,80
Silchar Co-op. Town Bank . . .	4,300	4,300	3,100	6,30
Sylhet Co-op. Town Bank . . .	2,200	4,750	8,300	11,80
Ganhati Co-op. Town Bank . .	1,500	2,550	1,200	3,75
Seranganj Co-op. Town Bank . .	—	—	500	500
Shillong Co-op. Town Bank . .	—	—	1,000	1,000
Rural Societies . . . . .	3,080	26	710	710
Total . . .	16,180	19,846	14,810	29,950

(1) Included for 1909-10 in the "Societies lending principally but not exclusively to other societies"  
 (2) Included for 1910-11 in the "Societies lending exclusively to other Societies."  
 (3) Included for 1909-10 in the "Societies lending principally to individuals."

(h) *Central Provinces and Berar.*

In 1909-10 there were, in the Central Provinces and Berar, five societies which the Registrar classed as "central societies," viz., the Crosthwaite Central Bank (Sihora), the Betul Central Bank, the Akola Central Bank, the Sironcha Central Bank and the Kirnapur Union.

The last-named, and three similar societies formed in 1910-11, seem us to be more properly classed as "unions."

Of the four remaining "central societies" which existed in 1909-10, Crosthwaite Central Bank, the Betul Central Bank and the Akola Central Bank lent exclusively to other societies. The Sironcha Central Bank lent principally to societies, but made loans also to individual members.

For 1910-11 we have transferred the Betul Central Bank to our second class of central banks.

Besides the three "unions" of which we have spoken, four new central societies were formed in the Central Provinces and Berar 1910-11, viz., the Murwara Central Bank, the Balaghat Central Bank which, however, did not commence business during the year, the Hoshangabad Central Bank and the Harda Central Bank. All these lent exclusively to other societies, but as the statistics are given by districts, we are not able to separate the Crosthwaite and Murwara Banks (both in Jubbulpore District) nor the Hoshangabad and Harda Banks (both in the Hoshangabad district).

TABLE VIII. — *Central Provinces and Berar: Loans by Societies to other Societies.*

	Loans to Societies			
	Granted 1909-10	Outstanding July 1st, 1910	Granted 1910-11	Outstanding July 1st, 1911
	Rs.	Rs.	Rs.	Rs.
<i>Societies lending exclusively to other Societies.</i>				
Crosthwaite Central Bank . . .	40,612	48,880	93,744	1,20,412
Murwara Central Bank . . .	—	—	—	—
Balaghat Central Bank . . .	—	—	—	—
Betul Central Bank (1) . . .	1,000	14,151	—	—
Hoshangabad Central Bank . .	—	—	8,649	8,649
Harda Central Bank . . . . .	—	—	—	—
Akola Central Bank . . . . .	2,575	1,550	11,025	9,800
Total . . .	44,187	64,581	1,13,418	1,38,861
<i>Societies lending principally, but not exclusively, to other Societies.</i>				
Betul Central Bank (2) . . . .	—	—	9,650	11,411
Sironcha Central Bank . . . .	380	2,930	5,616	551
Total . . .	380	2,930	15,266	16,962
<i>Societies lending principally to individuals.</i>				
Urban Societies . . . . .	—	1,000	4,875	444
Total . . .	—	1,000	4,875	444

(1) Included for 1910-11 among "Societies lending principally, but not exclusively, to other Societies."  
 (2) Included for 1909-10 among "Societies lending exclusively to other Societies."

(i) *Coorg, Ajmer, and Mysore.*

In the Province of Coorg, there were no central societies. For Ajmer and Mysore we have no Reports and our information is derived so from the general statistics published for 1909-10 as an Appendix to Report of the Fifth Conference of Registrars and for 1910-11 as a separate document.

It appears that both in Ajmer and in Mysore there was one society classed by the respective Registrars as a "central society." Each of these societies appears to have lent exclusively to other societies in 19

but to have lent also to individual members in 1910-11. For the latter accordingly, we have placed them in our second class of central banks. The following table contains particulars for Coorg, Ajmer, and Mysore of the "loans to other societies."

TABLE IX. — *Coorg, Ajmer and Mysore: Loans by Societies to other Societies.*

	Loans to other Societies			
	Granted 1909-10	Outstanding July 1 st., 1910	Granted 1910-11	Outstanding July 1 st., 1911
	Rs.	Rs.	Rs.	Rs.
<i>Societies lending exclusively to other Societies.</i>				
Ajmer: Central Society (1) . . .	6,201	6,201	—	—
Mysore: Central Society (1) . . .	6,500	6,500	—	—
<i>Societies lending principally, but not exclusively, to other Societies.</i>				
Ajmer: Central Society (2) . . .	—	—	67,318	51,086
Mysore: Central Society (2) . . .	—	—	28,605	33,605
<i>Societies lending principally to individual Members.</i>				
Ajmer: Rural Societies . . . .	166	166	—	1,800 (3)
Mysore: Urban Societies . . .	4,847	696	101	438
Rural Societies . . . .	44	—	36	106 (3)
Total (Mysore) . . . .	4,891	696	137	544
Coorg: Rural Societies . . . .	62	29	—	—

(1) Included for 1910-11 among the "Societies lending principally, but not exclusively to other Societies."

(2) Included for 1909-10 among "Societies lending exclusively to other Societies."

(3) There is a discrepancy in the figures for which we are unable to account.

#### (j) General Statistics.

We are now in a position to give collected statistics for the whole of India of the societies which we have classed as central banks.

The following Table shows for each Province and for India as a whole the loans granted by each class of central bank and for the two classes together.

TABLE X. — *Central Banks: Loans Granted other Societies*  
1909-10 and 1910-11.

Province	Number of Societies	Loans granted 1909-10	Loans outstanding July 1st, 1910	Number of Societies	Loans granted 1909-10	Loans outstanding July 1st, 1911
		Rs	Rs		Rs	Rs
<i>A. Societies lending exclusively to other Societies.</i>						
Madras . . . . .	1	67,400	67,050	1	1,44,760	2,00,56
Bombay . . . . .	2	—	11,994	2	21	998
Bengal . . . . .	4	94,848	93,048	8	1,05,813	1,60,34
United Provinces . . . . .	3	2,87,140	2,44,977	12	5,75,581	4,80,23
Punjab . . . . .	7	2,28,058	2,79,600	9	4,90,549	6,20,57
Burma . . . . .	1	8,960	22,920	2	6,98,760	6,83,31
Central Provinces and Berar . . . . .	3	44,187	64,581	6	1,13,418	1,38,86
Eastern Bengal and Assam . . . . .	2	25,079	54,139	3	61,038	1,16,72
Ajmer . . . . .	1	6,201	6,201	—	—	—
Mysore . . . . .	1	6,500	6,500	—	—	—
Total . . . . .	25	7,68,373	8,51,010	42	21,89,940	24,30,60
<i>B. Societies lending principally but not exclusively, to other Societies.</i>						
Madras . . . . .	2	7,31,050	12,55,940	3	9,80,383	18,11,43
Bombay . . . . .	1	15,550	14,550	1	16,350	21,35
United Provinces . . . . .	7	9,17,872	6,29,392	9	11,34,061	9,42,81
Punjab . . . . .	—	—	—	1	16,280	18,51
Central Provinces and Berar . . . . .	1	380	2,930	2	15,266	16,95
Eastern Bengal and Assam . . . . .	7	56,115	80,523	7	1,10,257	1,54,45
Ajmer . . . . .	—	—	—	1	67,318	51,08
Mysore . . . . .	—	—	—	1	28,605	33,00
Total . . . . .	18	17,20,967	19,83,335	25	23,68,520	30,50,244
<i>C. Both classes of Central Banks.</i>						
Madras . . . . .	3	7,98,450	13,22,990	4	11,25,143	20,12,008
Bombay . . . . .	3	15,550	26,544	3	16,371	31,335
Bengal . . . . .	4	94,848	93,048	8	1,05,813	1,60,340
United Provinces . . . . .	10	12,05,012	8,74,369	21	17,09,642	14,21,002
Punjab . . . . .	7	2,28,058	2,79,600	10	5,06,829	6,48,100
Burma . . . . .	1	8,960	22,920	2	6,98,760	6,83,311
Central Provinces and Berar . . . . .	4	44,567	67,511	8	1,28,684	1,55,853
Eastern Bengal and Assam . . . . .	9	81,194	1,34,662	10	1,71,295	2,71,174
Ajmer . . . . .	1	6,201	6,201	1	67,318	51,080
Mysore . . . . .	1	6,500	6,500	1	28,605	33,005
Grand Total . . . . .	43	24,89,440	28,34,345	68	45,58,450	54,80,872

The foregoing Table indicates very clearly the rapid development of central banks. In almost all the Provinces the increase of business has been striking. In no Province, however, has it been more so than in Madras, where it is due almost entirely to the formation of the Upper Madras Central Bank.

The relation between the loans outstanding and the loans granted gives some indication (though not very precise) of the duration of the loans granted. Taking India as a whole, the average duration would seem to be rather more than a year, but to be about two years in Madras and less than a year in the United Provinces.

It may be interesting to compare, for the whole of India, the official statistics of the loans granted to other societies by "central," "urban" and "rural" societies, with the figures which we have obtained by analysing the official statistics and classifying the societies differently:

TABLE XI. — *All societies: Loans granted 1909-10 and 1910-11*  
(Comparison of classifications)

Official Classification			Classification adopted in this article		
	1909-10	1910-11		1909-10	1910-11
Rural Societies . . . .	14,69,750	32,77,127	Societies lending exclusively to other Societies .	7,68,373	21,89,940
Urban Societies . . . .	11,30,535	13,91,874	Societies lending principally but not exclusively to other Societies . . .	17,20,967	23,68,536
Central Societies . . . .	2,01,606	3,67,713	Societies lending principally to individual members . . . . .	3,52,623	5,53,631
Total . . . .	28,01,891	50,36,714	Total . . . .	28,41,963	51,12,097

In 1909-10 the "central" societies lent (according to the official statistics) Rs. 1,90,902 to members, and the "urban" societies Rs. 23,27,034, whereas the societies which we have classed as "central banks" only lent Rs. 1,36,323. Similarly in 1910-11, the "central" societies lent Rs. 5,10,486 to members and the "urban" societies Rs. 30,02,700, while the central banks only lent Rs. 2,58,992. These figures go far to justify our re-classification of the societies with a view to showing separately the societies which can properly be regarded as central financing agencies.

The difference between the totals of the loans granted indicates the amount of the loans entered as "to members" which we have transferred to the heading "loans to other societies."

We now give a series of tables showing the aggregate receipts and disbursements, the aggregate profit and loss accounts and the aggregate balance sheets of the central banks:



TABLE XII. — Central Banks : Aggregate Receipts and Disbursements 1909-10 and 1910-11.

	1909-10			1910-11		
	Societies lending exclusively to other societies	Societies lending principally but not exclusively to other societies	Total	Societies lending exclusively to other societies	Societies lending principally but not exclusively to other societies	Total
<i>Receipts :</i>	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Share payments . . . . .	1,15,553	1,29,383	2,44,936	1,36,158	1,27,454	2,63,712
Entrance fees . . . . .	728	1,369	2,097	750	2,632	3,382
Deposits by members . . . . .	2,42,020	4,23,235	6,65,255	5,72,503	9,26,836	14,99,341
Loans from other sources :						
Government . . . . .	6,560	—	6,560	—	—	—
Other societies . . . . .	30,047	11,352	42,299	1,47,378	2,14,720	3,62,098
Non-members . . . . .	2,83,431	12,02,005	14,85,436	12,04,620	13,47,599	25,52,219
Loans repaid by members . . . . .	2,000	1,46,416	1,48,416	524	3,57,198	3,57,722
Loans repaid by other societies . . . . .	2,44,761	9,73,453	12,18,214	6,27,221	13,52,396	19,79,617
Interest received . . . . .	45,036	1,47,011	1,92,047	1,27,846	2,29,561	3,57,407
Sale proceeds of stock . . . . .	5	1,101	1,106	42	14	56
Other income . . . . .	6,001	66,435	72,436	9,127	2,05,722	2,14,849
Total income of year . . . . .	9,77,051	31,01,772	40,78,823	28,26,281	47,64,146	75,90,427
Opening balance . . . . .	45,028	45,495	90,523	1,05,700	1,24,040	2,29,740
Grand Total (including opening balance) . . . . .	10,22,084	31,47,269	41,69,333	29,31,983	48,88,191	78,20,174
<i>Disbursements :</i>						
Share capital withdrawn . . . . .	1,530	2,829	4,359	10,014	12,025	22,039
Deposits withdrawn . . . . .	13,550	1,40,517	1,54,067	1,81,870	5,04,349	6,86,366
Loans repaid to . . . . .						

Carried to reserve: . . . . .	₹. 1,905	₹. 3,102	₹. 2,399	₹. 1,727	₹. 476,916	₹. 75,25,671
Total expenditure . . . . .	9,17,095	30,61,861	39,78,956	27,59,761	1,22,371	2,94,598
Closing balance . . . . .	1,04,979	85,401	1,60,360	1,72,217		
Grand Total (including closing balance) . . . .	10,22,084	31,47,269	41,60,353	29,31,984	48,88,291	78,20,275

TABLE XIII. — Central Banks : Aggregate Profit and Loss Account.

	1909-10			1910-11		
	Societies lending exclusively to other societies	Societies lending principally but not exclusively to other societies	Total	Societies lending exclusively to other societies	Societies lending principally but not exclusively to other societies	Total
<i>Profit:</i>	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Interest earned . . . . .	54,781	1,63,458	2,18,279	1,50,966	2,55,946	4,06,912
Other items . . . . .	1,975	8,058	10,033	2,410	5,731	8,141
Total . . . . .	56,757	1,71,561	2,28,318	1,53,378	2,61,680	4,15,058
<i>Loss:</i>						
Interest paid and due . . . . .	28,614	1,07,372	1,35,986	92,234	1,54,144	2,46,378
Establishment and contingent charges paid and due . . . . .	5,111	9,791	14,902	15,119	20,554	35,673
Other items . . . . .	636	4,466	5,102	2,311	2,276	4,587
Total . . . . .	34,366	1,21,633	1,55,999	1,09,669	1,76,981	2,86,650
Net profit . . . . .	22,384	49,924	72,308	43,707	84,695	1,28,402

TABLE XIV. — Central Banks : Aggregate Balance Sheet, 1909-10 and 1910-1911

	1909-10			1910-11		
	Societies lending exclusively to other societies	Societies lending principally, but not exclusively, to other societies	Total	Societies lending exclusively to other societies	Societies lending principally, but not exclusively, to other societies	Total
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
<b>Assets :</b>						
Value of Investments . . . . .	1,04,980	85,410	1,90,390	1,73,157	1,20,203	2,93,360
Cash in hand and in bank . . . . .	2,828	48,939	51,767	12,024	1,63,107	1,75,131
Loans due by members . . . . .	—	1,19,165	1,19,165	475	2,21,692	2,22,167
Loans due by other Societies . . . . .	8,31,010	19,83,335	28,34,345	24,30,629	30,90,244	54,80,873
Interest due on loans . . . . .	16,002	41,690	57,692	38,140	75,242	1,13,382
Value of stock on hand . . . . .	520	1,308	1,865	1,220	2,037	3,257
Other Items . . . . .	349	23,589	23,916	4,284	28,644	32,928
Total assets . . . . .	9,75,702	23,03,649	32,79,353	26,59,936	36,61,184	63,21,120
<b>Liabilities :</b>						
Loans from non members . . . . .	3,46,081	11,01,352	14,47,433	14,14,763	16,65,868	30,80,631
Loans from other Societies . . . . .	29,047	55,666	85,613	99,730	1,22,829	2,22,559
Interest due on loans . . . . .	8,888	25,924	34,812	29,938	38,069	68,007
Loans from Government . . . . .	57,434	10,260	67,694	52,537	11,120	63,657
Interest due to Government . . . . .	1,525	392	1,917	1,397	361	1,758
Total loans and interest due . . . . .	4,43,876	11,93,597	16,37,473	15,98,370	18,38,252	34,36,612
Share capital . . . . .	2,06,212	2,48,107	4,54,319	3,37,355	4,36,627	7,73,982
Deposits by members . . . . .	2,77,796	7,41,460	10,19,256	6,42,146	11,73,895	18,16,041
Interest due to members . . . . .	6,704	22,372	29,076	12,457	33,520	45,977
Dividend due to members . . . . .	1,868	403	2,271	3,951	2,725	6,676
Total due to members . . . . .	4,92,584	10,12,344	15,04,928	9,95,909	16,46,769	26,42,676
Establishment and contingent charges . . . . .	448	245	693	1,128	656	1,784
Other Items . . . . .	12,081	27,799	39,880	3,386	18,964	22,350
Reserve Fund . . . . .	4,920	18,811	23,732	15,601	67,704	83,303
Total liabilities . . . . .	9,53,978	22,52,454	32,06,432	30,12,403	37,72,822	67,85,225
	2,177,776	5,24,454				

Some interesting facts are brought to light by these tables. One of them is the extraordinary smallness of the management expenses, which amounted in 1909-10 to Rs. 15,014 and in 1910-11 to Rs. 35,359. This is equivalent to 0.5 and 0.7 per cent. respectively of the total loans granted. It is clear, therefore, that the management is almost completely gratuitous.

The gross profit amounted in 1909-10 to 9.9 per cent. and in 1910-11 to 10.4 per cent. of the loans granted, while the net profit was 2.7 per cent. and 3.4 per cent. respectively. In almost every case the central banks made a profit; only in one or two instances were losses made, and these were unimportant.

The next two Tables show, for each Province and for India as a whole, the sources of capital of each of the two classes of central bank. Table XV gives the actual amounts and Table XVI the percentages of the total invested capital.

TABLE XV.

Province	Loans from non-members		Loans from other
	July 1st, 1910	July 1st, 1911	July 1st, 1912
	Rs.	Rs.	Rs.
<i>A. Societies lending exclusively to other Societies.</i>			
Madras . . . . .	4,479	1,13,883	4,000
Bombay . . . . .	—	—	—
Bengal . . . . .	63,735	1,04,469	—
United Provinces . . . . .	1,47,774	3,38,350	20,505
Punjab . . . . .	39,238	2,39,386	5,500
Burma . . . . .	16,880	4,26,180	—
Central Provinces and Berar . . . . .	29,125	1,00,647	—
Eastern Bengal and Assam . . . . .	44,850	91,839	—
Ajmer . . . . .	—	—	—
Mysore . . . . .	—	—	—
Total . . . . .	3,46,081	14,14,763	29,505
<i>B. Societies lending principally, but not exclusively to other Societies.</i>			
Madras . . . . .	5,78,864	7,85,249	56,800
Bombay . . . . .	—	—	—
United Provinces . . . . .	4,82,649	7,71,930	—
Punjab . . . . .	—	—	—
Central Provinces and Berar . . . . .	—	3,000	—
Eastern Bengal and Assam . . . . .	39,839	83,719	116
Ajmer . . . . .	—	21,950	—
Mysore . . . . .	—	—	—
Total . . . . .	11,01,352	16,69,868	56,916
<i>C. Both Classes of Society.</i>			
Madras . . . . .	5,83,343	8,99,132	61,800
Bombay . . . . .	—	—	—
Bengal . . . . .	63,735	1,04,469	—
United Provinces . . . . .	6,30,423	11,10,300	20,505
Punjab . . . . .	39,238	2,39,386	5,500
Burma . . . . .	16,880	4,26,180	—
Central Provinces and Berar . . . . .	29,125	1,03,647	—
Eastern Bengal and Assam . . . . .	84,669	1,75,558	116
Ajmer . . . . .	—	21,950	—
Mysore . . . . .	—	—	—
Grand Total . . . . .	14,47,433	30,80,631	88,221

uses of Capital.

Inst.	Share Capital		Deposits by Members		Reserve Fund		Total	
	July 1st., 1910	July 1st., 1911	July 1st., 1910	July 1st., 1911	July 1st., 1910	July 1st., 1911	July 1st., 1910	July 1st., 1911
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
—	3,200	7,600	56,100	72,055	—	—	67,779	1,97,098
1,720	8,600	8,600	1,300	300	487	607	14,315	11,227
1,000	6,760	30,437	25,649	45,945	65	878	1,00,209	1,85,727
5,317	38,340	69,678	17,600	31,771	5,735	10,069	2,78,041	5,69,318
—	1,01,370	1,21,055	1,37,175	2,66,941	140	1,603	2,83,123	6,45,220
—	4,760	46,240	—	2,09,745	240	240	21,880	6,86,164
—	27,964	34,950	21,800	10,846	951	930	79,840	1,48,813
490	8,413	18,795	672	4,545	312	1,274	54,809	1,18,025
—	3,175	—	3,500	—	—	—	6,766	—
—	3,628	—	14,000	—	—	—	17,628	—
5,557	2,06,212	3,37,355	2,77,796	6,42,146	4,920	15,601	9,22,390	25,62,132
—	—	—	—	—	—	—	—	—
—	1,06,900	1,51,780	5,11,911	7,36,197	2,330	10,848	12,54,855	18,00,374
—	5,875	7,320	11,750	24,993	—	43	17,625	32,350
3,110	92,070	1,66,914	2,00,476	2,81,328	14,960	53,390	7,91,415	12,06,777
—	—	13,820	—	7,400	—	—	—	21,220
—	3,025	10,010	—	10,826	210	490	3,244	26,831
8,000	40,237	64,598	17,323	44,501	1,302	2,933	1,08,517	2,07,100
—	—	7,275	—	20,000	—	—	—	50,725
—	—	14,010	—	28,650	—	—	—	42,660
1,120	2,48,107	4,36,627	7,41,460	11,73,895	18,811	67,704	21,75,656	34,78,043
—	—	—	—	—	—	—	—	—
—	1,10,100	1,59,380	5,68,011	8,28,252	2,330	10,848	13,22,634	19,97,412
1,720	14,475	15,920	13,050	25,293	487	650	29,940	43,583
4,000	6,760	30,437	25,649	45,945	65	878	1,00,209	1,85,727
15,447	1,30,410	2,36,592	2,18,076	3,45,099	17,685	69,459	10,60,456	18,66,695
—	1,01,370	1,34,875	1,37,175	2,74,341	140	1,603	2,83,123	6,66,440
—	4,760	46,240	—	2,09,745	240	240	21,880	6,86,164
—	30,989	45,860	21,800	21,672	1,170	1,420	83,084	1,75,644
8,490	48,652	83,393	17,995	49,046	1,614	4,207	1,63,326	3,25,125
—	3,175	7,275	3,500	20,000	—	—	6,766	50,725
—	3,628	14,010	14,000	28,650	—	—	17,628	42,660
15,657	4,54,319	7,73,982	10,19,256	18,16,041	23,731	83,305	30,28,046	60,48,275

Table XVI. — *Central Banks (Both Classes): Sources of Capital Expressed as Percentages of the Total Working Capital.*

Province	Loans from non-members		Loans from other societies		Loans from Government		Share Capital		Deposits by members		Reserve Fund	
	July 31st, 1910	July 31st, 1911	July 31st, 1910	July 31st, 1911	July 31st, 1910	July 31st, 1911	July 31st, 1910	July 31st, 1911	July 31st, 1910	July 31st, 1911	July 31st, 1910	July 31st, 1911
Madras . . . . .	44.10	45.02	4.45	5.00	—	—	8.33	7.98	42.95	41.47	0.18	0.54
Bombay . . . . .	—	—	—	—	6.44	3.95	48.35	36.53	43.59	58.03	1.63	1.49
Bengal . . . . .	63.60	56.25	—	—	3.99	2.15	6.74	16.39	25.59	24.74	0.06	0.47
United Province .	58.95	59.48	1.93	5.02	4.87	2.65	12.20	12.67	20.39	16.77	1.65	3.40
Punjab . . . . .	13.86	35.92	1.84	2.44	—	—	35.80	20.24	48.45	41.17	0.05	0.24
Burma . . . . .	77.15	62.11	—	0.54	—	—	21.75	6.74	—	30.57	1.10	0.03
Central Provinces and Berar . . .	35.05	59.01	—	1.73	—	—	37.30	26.11	26.24	12.34	1.41	0.81
Eastern Bengal and Assam . .	51.85	54.00	0.50	1.36	5.85	2.61	29.79	25.65	11.02	15.09	0.99	1.29
Ajmer . . . . .	—	43.27	1.34	2.96	—	—	46.92	14.34	51.73	39.43	—	—
Mysore . . . . .	—	—	—	—	—	—	20.58	32.84	79.42	67.16	—	—
Total . . . . .	46.72	51.00	2.76	3.68	2.18	1.05	14.66	12.81	32.90	30.07	0.77	1.28

Table XV indicates that the total working capital has increased rapidly, having almost doubled. The working capital of the societies dealing exclusively to other societies has shown the most remarkable increase; it was three times as large in 1911 than in 1910.

Comparing Table XV with Table XIV we find, as might be expected, that the total working capital does not differ greatly from the total amount of loans to other societies and to members which remain outstanding at the same date. Thus on July 1st., 1910, the total working capital Rs. 30,98,046 and the total loans outstanding Rs. 29,53,510, while corresponding figures for July 1st., 1911, were Rs. 60,40,275 and 57,03,040.

It will be noted that the loans from Government form but a trifling percentage of total working capital and that the capital derived from this source actually decreased between 1910 and 1911. The largest source of capital is the loans from non-members, and the rapidity with which these loans have increased shows that the central banks have quickly gained the confidence of the investing public. Not a few of the banks have received large advances from the ordinary banking companies.

The "loans from other societies" are small, which would suggest the conclusion that the central banks do not yet serve, to any large extent, for the investment of surplus funds of local societies. This conclusion must, however, be modified by the consideration that the "deposits of members" include also some deposits by local societies in central banks of which they are members. The extent to which this is the case is unable to determine.

The reserve funds are still small, but have notably increased.

One general remark regarding central banks may be made before passing to deal with the so-called "unions." In India many different types of central financing agency have been tried, with a view to ascertaining what kind is best suited to local conditions. It would require a more careful study of the question than has here been possible to say whether a society composed solely of other societies, the society with mixed membership, or the society having only individual shareholders was providing itself the best form to adopt, or whether limited liability was preferable to unlimited liability. Nor is it to be supposed that what is suitable in one province or district would necessarily be suitable in another. All the aggregate Tables, however, warrant the conclusion that the society dealing exclusively with other societies is growing in favour as compared with societies dealing both with other societies and with individuals. This, presumably, indicates that experience is showing the former kind to be the more satisfactory.

## § 2. UNIONS.

The union of co-operative societies, in the sense of a federation of societies for purposes other than that of providing working capital, is found in all the Provinces of India. In some, the central banks



fulfil also the functions of unions ; in others there are no organisations serving this purpose. We will examine separately the various provinces where there were during the period under review either unions or central banks acting as unions.

(a) *Madras.*

There were no unions in Madras in 1909-10, but the Registrar in his Report for that year, pointed out the necessity for central organisations to aid the Registrar and his staff of Inspectors in the work of supervising local societies. "In other countries," he remarked, "the supervision is entrusted to a council placed over the committee. But to set up as a member of a council or a committee, the person must know some arithmetic, possess some intelligence, appreciate business habits and be actuated by moral sympathy. The number of qualified people in a village is very few ; and all available persons get into the committee. I have none to spare for the council. Unless general education advances the system of local supervision by resident villagers cannot be tried in Madras."

In 1910-11, one union was formed, the Uttaramullar Union. It consisted of 19 societies and occupied itself with controlling and supervising its member-societies, without directly financing them. The bond established between the constituent societies was a very strong one for all the members of the societies became jointly and severally liable for debts contracted by any one society with the concurrence and on the recommendation of the Union. The Registrar looked forward to establishing similar unions in other districts and finally a union for the whole province.

(b) *Bengal.*

In Bengal the central banks are also unions. The scheme of centralisation introduced by the Registrar was described in his 1908-9 Report and was referred to on page 168 of the *Bulletin of Economic and Social Intelligence* of December, 1910. "It aims," the Registrar reported in his 1909-10 Report, "at the Federation of societies on a share-holding basis in one particular area, as they increase in strength and stability into local unions which undertake to finance their own societies and to supervise them and to encourage the formation of new societies. The experience of these two years' working has shown that although here there the scheme requires adjustment of details, it is on the whole suited to Indian conditions."

In his 1910-11 Report, the Registrar commented upon the work of each Union in the control and supervision of societies. Summarising his comments, he wrote : "The control is satisfactory in so far as the unions see that their societies are regularly inspected by the clerks at

cases by individual directors. That the control is not yet really shown by the many uncorrected defects in affiliated societies. The machinery of effective control is there and I hope and believe that use of it is only a matter of time and experience. Certain it is that, if a union exists, control of societies is much better than it would be if there were no union."

The unions were active, also, in the formation of new societies. The total number of societies so formed was 88, very few of which would come into existence but for the propagandist work of the unions.

(c) *Punjab.*

The Madar Union and the Talwandi Musa Khan Union, of which we have already spoken, acted both as central banks and as unions. The former embraced 49 local societies in 1910 and 65 in 1911. The organization and inspection of societies within the union was divided up among the members of the managing committee. The Talwandi Musa Khan Union included 24 local societies when it started business in May, 1911.

(d) *Burma.*

It is in the Province of Burma that the system of grouping societies into unions has been most largely developed. Up to July 1910, five unions had been formed in the Shwebo district and three in Mandalay. Altogether they comprised 92 societies.

These unions, the Registrar tells us, "are controlling inspecting, propagandist bodies. They assess the credit and requirements of affiliated societies, recommend new societies for registration, explain the principles and methods of co-operation and improve the security for members from non-members. Each affiliated society guarantees the indebtedness of other societies of the Union up to the limit of its own maximum savings within the year preceding a claim upon it. This limitation acts as an automatic check upon the excessive use of credit.

The union meets the cost of inspection of its affiliated societies and pays secretarial expenses by a rate upon affiliated societies of four annas (1/4) per Rs. 100 of capital held by them."

"The readiness of good societies to combine into unions is somewhat of a revelation," continued the Registrar. "In Upper Burma society accept them as a necessary product of the individual society. Though we have yet much to learn they are not mere paper associations. I have sat and watched the proceedings of union general meetings (formed by delegates from each affiliated society) and can vouch that they

An anna =  $\frac{1}{16}$  th. of a rupee.

efficiently reject unsatisfactory applications for registration and admission to the union; and their effect on the account-keeping of affiliated societies is already apparent. There is less weakness and soft-headedness and more *business* in the dealings of village with village than those of man with man in a single village. The union affairs tend to be managed in a more business-like way than those of the individual societies."

In 1910-11 the number of unions in Burma had increased to comprising 293 societies.

"Some of them," wrote the Registrar in his 1910-11 Report, "give very material assistance in supervision in addition to their functions as propagandist and guaranteeing organisations. The system of several unions combining to employ an inspector of societies will be extended. They have been specially useful this year in verifying members' names outside the societies and in getting large reductions made by credit for a cash settlement. Other unions are still learning their work and have little yet but federate societies into mutual guarantee associations, such, however, they render valuable assistance to the Registrar in securing the stability and requirements of affiliated societies. They certainly have done much to improve management and to spread a sound knowledge of co-operative principles."

(e) *Eastern Bengal and Assam.*

The Gauripur Union, of which we have already spoken, was intended to be a supervising as well as a financing agency, but its funds were not sufficient to enable it to employ a paid inspector and the work of supervision has not been adequately carried out.

In 1910-11, a local inspector was appointed for the Madaripur division of the Faridpur district and was paid by proportionate contributions from all the societies in the district, which in July 1911 numbered 97. The inspector worked under the control of the Madaripur Urban Bank.

At Sadarpur a Union, consisting of eight societies, was first constituted in 1910-11 and appointed a supervisor at Rs. 15 a month. "His duties," the Registrar tells us, "are to visit every society at least once a month, see that accounts are written up properly, and bring to the notice of the Union cases where loans are not collected with sufficient punctuality. Another most important part of his duties is to see that the cash balance in the hands of the chairman of each bank note for it has been found by experience that, from mere lack of business instinct, and not necessarily with any dishonest intent, the chairman of a society usually utilises the cash balance of his society for his personal expenditure. Another part of his duties will be to report to the Union when any constituent society requires a loan from a central bank."

union committee recommends the loan, it also stands surety for its payment. It is hoped that this additional security given will enable all banks to lend at lower rates of interest."

(f) *Central Provinces and Berar.*

The Kimapur Union, to which we have already referred, and the similar unions formed in 1910-11, are federations in which the constituent societies are jointly and severally liable for the debts contracted by one of them. The unions aid their member-societies in finding capital, but the capital so obtained is advanced direct to the societies, the source from which it emanates; the unions do not themselves receive capital and advance it to their members. They have, in fact, no capital funds and make no profits.

The Kidnapur Union embraced 23 societies on July 1st., 1910, and on July 1st., 1911, the four unions then existing comprised 62 societies.

\* \* \*

This completes our survey of the central organisations of credit societies in India during the years 1909-10 and 1910-11. In forming such organisations the Registrars began experimentally, and many different methods were tried, but the development has been so rapid as hardly to allow time to ascertain clearly the results of the experiments. It is possible, therefore, that, in future years, it may be necessary to reconstruct some of the organisations. This process, indeed, we have already noticed taking place in the United Provinces. But the rapidity of the development is convincing proof of the vitality of the movement in India and of the capacity of the Indian people for the more complex as well as the simpler forms of organisation. In obtaining capital, the local societies are now almost independent of the Government; in regard to supervision they are still far from being so, but the growth of supervising unions promises that the Government may eventually be able to leave the supervision of societies largely to their own central organisations.

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## SWITZERLAND.

### THE ENQUIRY OF THE SWISS PEASANTS' SECRETARIAT IN THE AGRICULTURAL ASSOCIATIONS OF SWITZERLAND.

#### SOURCES:

ENQUÊTE SUR L'ÉTAT DE L'ASSOCIATION DANS L'AGRICULTURE SUISSE AU 1<sup>er</sup> JANVIER 1912.  
(*Inquiry into the Condition of Association in Swiss Agriculture on January 1st, 1912.*)  
Berne, K. J. Wyss, 1912.

In a monograph published in one of the earliest numbers of Bulletin (1) we dealt at length with the agricultural organization of Switzerland and the development of agricultural association and co-operation in their many forms in that country. But it was not possible for us to give precise information as to the number of societies and their members as there were no complete statistical returns dealing with the subject. In this connection we observed that the *Swiss Peasants' Secretariat*, which is the Central Office of the *Peasants' Union*, which is the fulcrum of Swiss agricultural organization, was preparing an extensive inquiry into agricultural association to fill the gap. This enquiry, carried out under the direction of the eminent Dr. Ernest Laur, has now been brought to a close; its results are given in a recent publication of the above Secretariat. We shall here give a summary of this work which, in point of method, research and careful elaboration is of great importance for agricultural association, so as both to make known to our readers the system adopted in the extensive undertaking and to show the wonderful progress made by agricultural association and co-operation in recent years in the Swiss confederation.

#### § I. LIMITS AND ORGANIZATION OF THE ENQUIRY.

As we have said above, there were no complete statistics of agricultural association in Switzerland: those compiled in accordance with the returns in the commercial register only gave a general idea of the position as the various classes of societies were not shown separately. Under

(1) *Bulletin of Economic and Social Intelligence*, Year I, No. 2, October-November 1911, p. 244.

tions, the Swiss Peasants' Union in 1910 instructed the Peasants' Secretariat to collect full Statistical information on the various forms of agricultural association.

The enquiry had to establish the number of the associations and of their members, as well as the objects they proposed to accomplish: it was to include all societies of agricultural character, even those registered in the commercial register. For the purpose, the organs of the inquiry sent out a schedule of questions prepared with the greatest simplicity so as to avoid diffuseness, which generally prevents clarity in the answers. The list of questions which we think it desirable to publish in full in the Appendix was thus limited to an enquiry in each case, in to the *title, headquarters, number of members, year of foundation, and objects*. The distribution of the document was entrusted to the *confidential agents of the Union*, of whom there is one appointed for each commune: a special circular appealed to their diligence and set forth guiding principles for the execution of the task.

Every correspondent received a certain number of schedules: in addition to those for the societies of his commune registered in the list of the Secretariat, which were already addressed, he received additional ones for other societies that might perhaps exist. The answers were to be filled in by the correspondent for the commune in which were the headquarters of the society. If he were in a position to fill in the answers of his own knowledge, he was to return the schedule at once; otherwise he was to go to the president or secretary of the society to obtain the necessary information. The circular further issued special recommendations so as to avoid duplicate returns and laid down precise rules that societies of purely agricultural character should be taken into consideration<sup>(1)</sup>.

(1) The circular gave the following list of associations that were to form the object of the enquiry: Agricultural Associations and Societies; Societies of Public Utility of an Agricultural Character; Peasants' Leagues; Societies of Alpine Economy; Agricultural Societies; Agricultural Co-operative Distributive Societies; Horned Cattle Improvement Societies and Societies; Horse Improvement Syndicates and Societies; Pig Improvement Societies and Societies; Sheep Improvement Syndicates and Societies; Goat Improvement Societies and Societies; Ornithological Societies; Poultry Improvement Societies; Rabbit Improvement Societies; Beekeeping Societies; Mutual Horse Insurance Societies; Horned Cattle Insurance Societies (including compulsory societies); Small Livestock (Pig, Sheep, etc.) Insurance Societies; Alpine Pasture Associations and Corporations, independent of Communal Administration; Drainage and Land Reclamation Syndicates; Irrigation Syndicates; Restripping Syndicates; Other Land Improvement Syndicates; Associations for Cultivation (tobacco, beetroot, etc.); Market Gardening Associations; Societies for the Cultivation of Fruit and Trees; Viticultural Societies and Wine-Making Associations; Societies for the Production of Fruit: Cider Making Syndicates; Fruit Export Syndicates; Agricultural Implements and Machine Syndicates; Threshing Machine Societies; Agricultural Milling Societies; Baking Associations (for the most part of Farmers); Distilling Syndicates; Cheese Societies, *Fruithörs*; Credit Associations of strictly Agricultural Character; Raiffeisen Banks; Societies for Loans on Cattle.

Taking into consideration that the enquiry depended for its results essentially upon the work of the correspondents, those results were, as the report declares, excellent. The schedules not returned were few; when they were not returned, the Secretariat appealed to the communal administrations, to the nearest correspondents, to the agricultural associations, and, as a last resource, to the cantonal agricultural departments. The Commission was able to report on all the agricultural associations existing in Switzerland on December 31st., 1909, with very few exceptions.

In the preparation of the report, the Secretariat based its classification of the various associations not on their legal or economic character but on their *title*. "This method," says the report, "best suits the purpose, since it allows of the grouping together of the societies that by their very nature have the greatest affinity to each other. The object they propose to serve could not be taken as the basis for their classification; as many societies have many different functions, it would not have been possible to obtain a methodical distribution."

So much said, we shall observe that the report divides the associations into two principal groups: the *Unions* or *Federations* and the *Associations*. The former embrace one or more cantons and may be cantonal, intercantonal, or Swiss (national) unions; the latter are of local character and include the communal or district societies and co-operative societies of every kind.

The associations were divided as follows:

- Agricultural Societies and Agricultural Associations;
- Ornithological Societies, Poultry and Rabbit Improvement Societies
- Beekeeping Societies;
- Agricultural Syndicates and Co-operative Societies;
- Dairy and Cheese Making Societies;
- Horned Cattle Improvement Societies;
- Horse Improvement Societies;
- Goat Improvement Societies;
- Sheep Improvement Societies;
- Pig Improvement Societies;
- Societies for Fruit Cultivation and the Utilisation of Fruit;
- Viticultural Societies and Winemaking Associations;
- Threshing Machine Associations;
- Distillery Associations;
- Agricultural Milling and Baking Associations;
- Land Improvement Associations;
- Alpine Economy Associations and Alpine Pasture Syndicates
- Forestry Associations;
- Cultural Associations;
- Market Gardening Associations;
- Mutual Credit Associations;
- Associations for Loans on Cattle;
- Mutual Insurance Associations.

The report deals first of all with the local, communal and district associations; then with the federations. For the first it limits itself to giving the total data for each canton; the second are considered individually.

The report further divides into two separate groups the societies purposes of general utility and those with an economic aim, assigning to the first group the first three classes of associations in the above list, naming them under the title of *Agricultural Societies and Associations*; the second group, the remaining twenty classes under the general title *Agricultural Co-operative Societies and Syndicates*. The distinction is, however, not absolute, since, as the report observes, if the co-operative societies more generally known under the name of Syndicates have an essentially economic object, this is not to say that the associations do not have pure financial and economic advantages: these advantages, however, are not for the exclusive benefit of the members, as in the case of the syndicates, but also for that of third parties. However, the classification is rather of historical than present importance: practically, it may be said that there is no difference between associations and syndicates.

Following the method of the report, we shall first examine the co-operative societies and then proceed to speak of the characteristics and objects of the various societies, referring to the other desirous of further information to the above mentioned monograph *Agricultural Organization in Switzerland* (1).

## 2. SOCIETIES OF AGRICULTURE AND AGRICULTURAL ASSOCIATIONS.

### (A) *Local Associations.*

The first groups of farmers proposing to themselves objects of general utility assumed the name of Agricultural Societies. Their object was, still to some extent is, to favour the general advance of agriculture: they occupy themselves especially with professional questions and contribute by means of publications, courses and lectures, to increase the agricultural production and to raise the intellectual level of the agriculturalists. Often they act as representatives of agriculture in political and economic matters; and take part in electioneering contests.

The agricultural associations have gradually extended their action to the economic field and aim at the same time at the cultural progress of their members and the improvement of their material conditions, entering into the proper field of the Syndicates. And this explains the districts in which the associations developed first have a small

(1) See note on page 32.



number of syndicates, while the latter are more frequently found where the needs of social life made themselves felt later, when the agricultural world had become accustomed to the syndicate form. At present the agricultural associations also concerning themselves with economic questions far exceed in number those that devote themselves entirely to politico-professional business: in 494 associations, 380 or 77 % concern themselves equally with professional progress, supply of goods and sale of agricultural produce.

Many of them have entered themselves among the corporations on the Commercial Register in order to obtain civil personality and have acquired the right to possess real estate, sue at law, etc. By the new Civil Code (1912) the agricultural associations, however, acquire civil personality without having to resort to the above registration. The facts that lead more and more to the approximation of the associations to the syndicates, explain the geographical distribution of the form and the unequal distribution of the second class on Swiss territory.

(a) *Agricultural Associations.* — Of the 494 local associations reported in the report, 305 (62 %) were formed after 1880; 141 (28 %) in the period 1850-1870; only 1.8 % date from before 1850. The date of foundation of the other 39 (7.8 %) could not be ascertained.

The cantons with the largest number of local associations are Zurich (119), Thurgau (54), Berne and St. Gall (43 each); the cantons of Lucerne, Zug, and Obwald have none at all.

The work of 380 (77 %) is economic: 122 (32 %) are entered on the Commercial Register.

The following table shows the number of local associations in various cantons, the date of their foundation, and the number of members, and distinguishes them according as their character is economic or not, and as they are entered or not in the Commercial Register.

TABLE I. — *Local Agricultural Associations.*

Cantons	Total Number of Associations Number of Associations Return- ing Number of Members		Number of Members, January 1st, 1910.	Date of Foundation						Local Agricultural Associations								
				1900-1909	1890-1899	1880-1889	1870-1879	1850-1869	Previous to 1850	Unknown	Economic	Not Economic	Registered		Not Registered			
													In the Commercial Register					
													Number	%	Number	%		
nich . . . . .	119	117	10,739	11	23	32	32	17	1	3	104	15	40	34	79	66		
me . . . . .	43	42	9,024	15	7	7	5	3	1	5	18	25	11	26	32	74		
xerne . . . . .	13	13	1,29	2	2	1	2	5		1	2	11	1	8	12	92		
st . . . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
weys . . . . .	5	4	75	—	1	1	—	2	—	1	5	—	—	—	5	100		
wald . . . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
idwald . . . . .	1	1	62	1	—	—	—	—	—	—	1	—	—	—	1	100		
is . . . . .	4	4	249	2	—	—	1	—	1	—	4	—	2	50	2	50		
g . . . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
ribourg . . . . .	24	24	5,310	8	6	5	1	1	—	3	23	1	15	62	9	38		
schbrun . . . . .	9	9	1,511	2	1	3	—	—	—	3	2	7	1	11	8	89		
sch-City . . . . .	2	2	230	—	1	1	—	—	—	—	1	1	1	50	1	50		
sch-Country . . . . .	22	22	1,230	2	11	9	—	—	—	—	21	1	8	36	14	64		
schthausen . . . . .	18	18	1,020	5	5	3	3	1	1	—	18	—	2	11	16	89		
pparsell R. E. . . . .	18	18	944	1	9	2	2	3	—	1	17	1	4	22	14	78		
pparsell R. L. . . . .	2	2	219	—	1	1	—	—	—	—	2	—	—	—	2	100		
L. Gall . . . . .	43	42	5,846	13	4	8	11	5	1	1	41	2	3	7	40	93		
schions . . . . .	4	4	671	2	—	—	1	1	—	—	3	1	—	—	4	100		
argau . . . . .	20	19	2,479	3	2	2	1	7	3	2	7	13	1	5	19	95		
hurgau . . . . .	59	54	3,473	15	8	8	5	6	—	17	39	20	5	7	54	93		
schino . . . . .	10	9	3,003	—	—	—	4	6	—	—	3	7	1	10	9	90		
sch . . . . .	32	32	7,120	7	8	4	7	4	1	1	30	2	18	56	14	44		
sch . . . . .	32	32	1,769	15	9	4	2	1	—	1	28	4	3	9	29	91		
schthel . . . . .	7	7	2,656	1	—	5	—	1	—	—	6	1	2	29	5	71		
sch . . . . .	7	7	479	3	3	—	—	1	—	—	5	2	4	57	3	43		
Total . . . . .	454	454	60,084	108	101	96	77	64	9	39	380	114	122	25	374	75		

(b) *Local Ornithological, Poultry and Rabbit Improvement Societies.* — Although bearing different titles, these associations are grouped together under one head because they have more or less the same object, that is : (1) the encouragement of ornithological study and the communication of knowledge on the subject, (2) the encouragement of the production of birds, (3) the development of poultry and rabbit improvement, by means of the collective sale of their produce, collective purchase of cattle food, shows, prize competitions, etc.

These forms of association had their beginning more than fifty years ago : they arose first in German Switzerland where we find them in 1861 : those occupying themselves essentially with rabbit improvement are of later origin.

The following table gives statistical information for these associations in the different cantons :

II. — *Local Ornithological, Poultry and Rabbit Improvement Societies.*

Cantons	Total Number of Societies Number of Societies Returning Number of Members		Number of Members, January 1st, 1920	Date of Foundation							Ornithological, Poultry and Rabbit Improvement Societies						
				1900-1909	1890-1899	1880-1889	1870-1879	1860-1869	Previous to 1850	Unknown	Economic	Not Economic	Registered				
													in the Commercial Register				
No.	%	No.	%														
Urich . . . . .	39	39	2,314	11	8	3	—	2	—	15	8	31	2	5	37	95	
Urie . . . . .	14	14	641	6	1	2	—	—	—	5	2	12	2	14	12	86	
Uriete . . . . .	4	4	209	1	1	—	—	—	—	2	—	4	—	—	4	100	
Uri . . . . .	1	1	130	1	—	—	—	—	—	—	—	1	1	100	—	—	
Uriys . . . . .	6	6	176	1	—	—	1	—	—	4	—	6	—	—	6	100	
Uriwald . . . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Uriwald . . . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Uriis . . . . .	2	2	117	—	—	1	—	—	—	1	1	1	—	—	2	100	
Uri . . . . .	3	3	242	1	1	—	1	—	—	—	—	3	—	—	3	100	
Uriwing . . . . .	2	2	310	—	—	2	—	—	—	—	—	2	—	—	2	100	
Uriothurn . . . . .	11	11	502	5	—	1	1	—	—	4	1	10	—	—	11	100	
Urie-City . . . . .	5	5	388	2	1	1	1	—	—	—	1	4	1	20	4	86	
Urie-Country . . . . .	5	5	228	1	3	—	—	—	—	1	2	3	—	—	5	100	
Urichhausen . . . . .	2	2	120	—	1	—	—	—	—	1	—	2	—	—	2	100	
Uripszell R. R. . . . .	7	7	289	4	2	1	—	—	—	—	5	3	—	—	7	100	
Uripszell R. I. . . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Uri. Gall . . . . .	22	20	1,045	16	3	2	1	—	—	—	5	17	1	4	21	96	
Urisons . . . . .	1	1	44	1	—	—	—	—	—	—	1	—	—	—	1	100	
Urirgan . . . . .	12	12	432	6	—	—	—	—	—	6	3	9	—	—	12	100	
Urirgan . . . . .	15	15	681	7	2	—	—	—	—	6	3	12	—	—	15	100	
Uriino . . . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Uriud . . . . .	6	6	300	5	1	—	—	—	—	—	2	4	1	17	5	83	
Uriais . . . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Uriochtel . . . . .	1	1	45	1	—	—	—	—	—	—	—	1	—	—	1	100	
Urieneva . . . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Total . . . . .	158	156	8,153	69	24	13	5	2	—	45	34	124	8	5,1	150	94.9	

(c) *Local Beekeeping Societies.* — In the field of beekeeping the progress of association has been successful and it is continually extending; few are now the regions of Switzerland, especially of German Switzerland, that possess no such associations. At the end of 1909 there were 11 with more than 7,300 members: 31 of these have an economic character, 2 have acquired civil personality. We give data in the following table

TABLE III. — *Local Beekeeping Societies.*

Canton	Total Number of Societies Number of Societies Returning Number of Members		Number of Members, January, 1st, 1910	Date of Foundation						Beckkeeping Societies										
				1900-1909	1890-1899	1880-1889	1870-1879	1850-1869	Previous to 1850	Unknown	Economic	Not Economic	Registered				Not Registered			
													in the Commercial Register							
No.	%	No.	%																	
Richmond	13	15	1,099	4	2	8	—	1	—	—	3	12	1	7	14	93				
Seattle	21	21	1,619	6	7	7	—	1	—	—	8	13	—	—	21	100				
Spokane	9	9	657	1	7	1	—	—	—	—	2	7	—	—	9	100				
Portland	2	2	48	—	1	—	1	—	—	—	2	—	—	—	2	100				
Bozeman	4	4	158	1	2	1	—	—	—	—	4	—	—	—	4	100				
Walla Walla	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Idaho Falls	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Butte	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Boeing	2	2	87	1	—	—	—	—	—	1	—	2	—	—	2	100				
Idaho Falls	7	7	450	1	3	3	—	—	—	—	3	4	—	—	7	100				
Idaho Falls City	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Idaho Falls Country	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Idaho Falls	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Idaho Falls R. E.	3	3	136	—	1	1	—	—	—	1	1	2	—	—	3	100				
Idaho Falls R. L.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Idaho Falls	15	15	750	5	3	4	—	3	—	—	5	10	—	—	15	100				
Idaho Falls	8	8	268	4	2	2	—	—	—	—	2	6	—	—	8	100				
Idaho Falls	13	13	833	4	3	5	1	—	—	—	1	12	—	—	13	100				
Idaho Falls	6	6	322	—	4	1	—	1	—	—	—	6	—	—	6	100				
Idaho Falls	2	2	43	2	—	—	—	—	—	—	2	—	—	—	2	100				
Idaho Falls	7	7	391	1	2	4	—	—	—	—	2	5	1	14	6	86				
Idaho Falls	2	2	64	1	—	1	—	—	—	—	—	2	—	—	2	100				
Idaho Falls	5	4	405	—	2	3	—	—	—	—	2	3	—	—	5	100				
Idaho Falls	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Total	131	130	7,330	31	39	41	2	6	—	2	31	90	2	17	110	98.3				

(B) *Cantonal Societies and Federations.*

The local associations are united in larger groups, especially in cantonal, intercantonal and Swiss Societies of Agriculture. There are, however, by the side of these, other cantonal or Swiss societies to be distinguished from them, with their own members, not considered in foregoing statistical returns: the report of the enquiry gives lists of them with some notes on their organization and their objects.

(a) *Cantonal Agricultural Societies with Sections.* — These societies originated in the union of small associations in the canton; generally they also have independent members. The report shows 22 with 90 members. 3 of them have an economic office (supply of products) and 4 are registered in the Commercial Registers.

We give a list of the cantonal agricultural societies, composed of a large extent of sections:

1. *Zürich Agricultural Cantonal Society.* — founded in Zürich in 1842, with the object of developing agriculture from the technical and economic point of view, it is composed of associations, leagues, local regional agricultural co-operative societies and some individual members; it had, at the end of 1909, 126 sections with 12,615 members; it publishes the *Zürcher Bauer*, as its weekly organ;

2. *Economic Society of Public Utility of the Canton of Berne.* — founded in 1759, and was reorganized in 1890, with the object of encouraging the progress of economic studies and especially of advancing agriculture; it enjoys civil personality; it had 74 sections and 31,194 members, all independent; its organ is the "*Schweizer Bauer*,"

3. *Farmers' Society of the Canton of Lucerne.* — founded at Lucerne in 1859, for the defence of agricultural interests and the advance of agriculture; it had 40 sections and 2,585 members; its organ is the "*Landwirt*,"

4. *Uri Peasants' Association.* — founded in 1908 at Altdorf, for the advance of Agriculture and Alpine economy; it had many sections (local societies or syndicates) and 112 members, some of them independent;

5. *Cantonal Agricultural Society of Schwyz.* — founded in 1848, it had 616 members;

6. *Nidwald Peasants' Association.* — founded in 1859, it had 112 members;

7. *Federation of the Fribourg Agricultural Societies.* — founded in 1848, with headquarters at Fribourg; it had 41 sections and 1,115 members; it has the "*Chronique d'Agriculture et d'Industrie*" as its bimonthly organ;

8. *Cantonal Agricultural Society of Solothurn.* — founded in 1848, it had 16 sections with 2,115 members; its weekly organ is the "*Landwirtschaftliches Blatt*,"

9. *Cantonal Agricultural Society of Basle-City.* — founded in 1804; it had 2 sections with 220 members;

10. *Cantonal Agricultural Society of Schaffhausen*. — founded about the middle of the last century; amongst other things it is engaged in active economic work in the field of co-operation, that is to say, it occupies itself with the sale of agricultural produce; it had 22 local sections and 4 cantonal associations with 1,465 members;

11. *Cantonal Agricultural Society of Appenzell R. E.* — founded 1881 at Teufen, it had 18 sections and 942 members;

12. *Cantonal Agricultural Society of Appenzell R. I.* — dating from 1888; it is also engaged in the sale of produce; it had 196 members; the most part belonging to two sections; it has a biweekly organ: the *Appenzeller Bauer*;

13. *Cantonal Agricultural Society of St. Gall.* — founded at St. Gall in 1818; its character is economic; it had 77 sections with 8,904 members;

14. *Cantonal Agricultural Society of the Grisons*. — founded in 1878; had 64 sections and 2,188 members, of whom 182 were individuals; its organ is the: "*Bündner Bauernblatt*;"

15. *Cantonal Agricultural Society of Aargau*. — reorganized in 1888; it had 11 sections (district societies) with 2,390 members; these district societies form the administrative nuclei of the cantonal societies; hence might be considered as societies with immediate members.

16. *Aargau Peasants' Federation*. — founded in 1901; it occupies itself with the interests of agriculture in matters of legislation, politics, economy; it was composed of sections and *confidential agents*; above cantonal society belongs to the federation; the exact number of members could not be ascertained;

17. *Cantonal Agricultural Society of Thurgau*. — founded in 1836, headquarters at Frauenfeld; it has civil personality and has founded a *co-operative Union for the Purchase of Farm Requisites*; it had 59 sections and 3,980 members; its organ is the: "*Ostschweizerische Landwirt*;"

18. *Cantonal Agricultural Society of Ticino*. — founded in 1883, headquarters at Bellinzona: each district has a section, except that of Lugano has two; there were 9 sections and 3,000 members;

19. *Vaud Agricultural and Viticultural Society*. — founded in 1868, includes the communal and regional associations of the Canton: it had 28 members; its organ is the: "*La terre Vaudoise*;"

20. *Agricultural Association of the Valais*. — founded in 1888, headquarters at Sion; in addition to the general objects of agricultural societies, it acts as a syndicate for purchase: in 1910 it did business to the amount of 98,382 frs; the total number of its members was 20; its organ is: "*Le Valais agricole*;"

21. *Neuchâtel Cantonal Agricultural and Viticultural Society*. — founded in 1859, at Neuchâtel, it had 2,523 members; its organ is the: "*Bulletin agricole neuchâtelois*;"

22. *Club of the Farmers of the Canton of Geneva*. — founded in 1868, acts as a syndicate for supply of the local syndicates; in 1909 did a goods business to the following amount, 70,406 frs. for grain,



22,523 frs. for manure, 25,507 frs. for sulphate of copper, 12,008 frs. for machinery, implements, etc.; the agricultural club grazed 266 ha of young horned cattle on its own land.

(b) *Cantonal Agricultural Societies with Immediate Members.*—Like the other cantonal societies, these associations propose to promote the advance of agriculture; they are, however, purely professional and are not registered in the Commercial Register. The Report mentions 8, namely:

1. *Society of Public Utility of the Canton of Uri*: founded in 1800 with headquarters at Altdorf. It gives assistance in times of public calamity, it occupies itself with educational, economic matters, etc.; it had 460 members;

2. *Obwald Peasants' Association*: founded in 1860, 210 members;

3. *Agricultural Society of the Canton of Glaris*: founded in 1846 members;

4. *Agricultural Society of the Canton of Zug*: founded in 1880 members;

5. *Cantonal Agricultural Society of Basle-Country*, dates from about 1776; it had 1,144 members.

6. *Peasants' and Workmen's League of Basle-Country*: from 1892; it was not possible to ascertain the number of members; its organ is "*Der Bauern- und Arbeitsbund*;"

7. *Agricultural Section of the German Artisans' Society*: members. Its organ is the "*Bulletin of the Agricultural Section of Geneva Artisans' Society*;"

8. *Industrial and Agricultural Section of the Geneva National Institute*: founded in 1853; it had 120 members and 17 foreign respondents.

(c) *Societies of pupils of the Agricultural Schools.*—The pupils of the Agricultural Schools have generally united in societies with the object (a) of increasing their professional knowledge, (b) of co-operating in the progress of agriculture from the technical and economic point of view, (c) of maintaining friendly relations between the pupils of the different classes and defending their interests, (d) maintaining relations with the school and contributing to its prosperity.

On January 1st., 1910, there were 15 associations of the kind in Switzerland, namely: the Society of the pupils of the agricultural school of *Strickhof* (Zurich), dating from 1889, with 520 members; of *Waldswil* (Zurich), founded in 1892, with 257 members; of *Rütti-Zollikofen* (Berne), in 1873, 850 members; of *Ruetli-Zollikofen* (dairyschool), (Berne) in 1900, 250 members; of *Porrentruy* (Bernese Jura), in 1903, 55 members; of *Sursee* (Lucerne), 1899, 330 members; of *Pérolles* (Fribourg) 1898, 265 members; of *Schaffhausen*, 1907, 93 members; *Custerhof-Rheineck* (Saint Gall), 1898, 225 members; *Plantahof-Landquart* (Grisons), 1894, 148 members; *Brugg* (Aargau), 1893, 642 members; *Thurgau* (Castle Arnhemberg), 1899, 220 members; of the *Canton of Vaud* (Lausanne), 1891,

members; *Ecône* (Valais), 1906, 63 members; *Cernier* (Neuchâtel), 145 members.

Lately the societies of old pupils of the Agricultural School of *Sornin* (1911 — 90 members) and of the Dairy School of *Moudon* (1912) been formed.

(d) *Cantonal Ornithological, Poultry and Rabbit Improvement Societies*. — In addition to the local societies of which we have spoken were on January 1st., 1910, 11 of these societies with cantons for district, namely:

	Founded in	Members
<i>Zurich Cantonal Poultry Improvement Society</i> . . . . .	1908	60
<i>Lucerne Cantonal Ornithological Society</i> . . . . .	1908	175
<i>Glaris Cantonal Ornithological Society</i> . . . . .	1883	64
<i>Fribourg Ornithological Society</i> . . . . .	1862	120
<i>Solothurn Cantonal Poultry and Rabbit Improvement Federation</i> . . . . .	1908	210
<i>Schaffhausen Cantonal Poultry and Rabbit Improvement Federation</i> . . . . .	1909	60
<i>Thurgau Cantonal Ornithological, Poultry and Rabbit Improvement Society</i> . . . . .	1908	441
<i>Ticino Cantonal Poultry Improvement Society</i> . . . . .	1896	106
<i>Vaud Cantonal Society of Young Poultry Improvers</i> . . . . .	1872	1,200
<i>Vaud Cantonal Poultry Improvement and Ornithological Society</i> . . . . .	1908	155
<i>Geneva Poultry Improvement Union</i> . . . . .	1908	150

In 1910 the *St. Gall Cantonal Ornithological Federation* was founded 500 members.

(e) *Cantonal Beekeepers' Societies*. — As we saw above, association has made special progress in the field of beekeeping; in addition to 121 local societies, there were on January 1st., 1910, 16 cantonal ones, namely:

1st., *Cantonal Society of Zurich*, founded in 1881, with 205 members; 2nd., *Lucerne* (1881, 428 members); 3rd., *Obwald* (1891, 32 members); 4th., *Nidwald* (1892, 27 members); 5th., *Glaris* (1881, 55 members); 6th., *Zug* (1889, 127 members); 7th., *Fribourg* (1869, 260 members); 8th., *Romance Fribourg* (1869, 260 members); 9th., *Solothurn* (1908, 125 members); 10th., the two *Basles* (1901, 373 members); 11th., *Schaffhausen* (1886, 125 members); 12th., *Aargau*, (1904, 964 members); 13th., *Appenzel A. O.* (1863, 131 members); 14th., *Vaud* (1908, 600 members); 15th., *Valais* (1897, 145 members); 16th., *Geneva* (1886, 128 members). In the *Neuchâtel Beekeepers' Cantonal Society* was founded. It has 100 members.

## (C) Intercantonal and Swiss Societies.

Under this head are included societies extending their action beyond the limits of the canton. Here also a distinction is made between those formed of sections and those that have their own immediate members.

(a) *Swiss and Agricultural Societies with Sections.*

1. *Swiss Society of Agriculture.* — Formed in 1863 by the Union of the Swiss Farmers' Society and the Central Swiss Agricultural Society is the central institute of Agricultural Association in all German Switzerland. Besides occupying itself with the general interests of agriculture and assigning federal subventions, it exerts itself in various ways, in the foundation of accident insurance societies, in arranging agricultural experiments, in the importation of boars, etc. On January 1st., it had 29 sections with 48,011 members. Its organ is the "*Schweizerische landwirtschaftliche Zeitschrift*."

2. *Federation of Agricultural Societies of Romance Switzerland.* Founded in 1881 in order to unite in one body the Agricultural Societies of Latin Switzerland, it had at the beginning of 1910 31 sections with 21,506 members. Its organ is the "*Journal d'Agriculture Suisse*."

(b) *Swiss Agricultural Societies with Immediate Members.*

1. *Swiss Farmers' Society:* founded in 1882; it had at the beginning of 1909, 210 members;

2. *Agricultural Society of Latin Switzerland:* founded in 1858; it promoted the foundation of the above Federation of Agricultural Societies of Latin Switzerland, to which some of its functions were transferred. It now occupies itself with economic and scientific study; it had at the beginning of 1910, 135 members; its organ is the "*Journal de l'Agriculture de la Suisse romande*;"

3. *Association of the Professors of Agricultural Schools:* founded in 1901; it aims at the development of agricultural education; it had 10 members.

(c) *Swiss Ornithological and Beekeeping Societies:*

1. *Swiss Ornithological Society,* founded at Olten in 1875; it had 103 sections and 4,800 members, which to-day have respectively reached the numbers of 140, and 6,000. Its official organ is the "*Zeitschrift für Ornithologie*."

2. *Swiss Poultry Improvement Society:* founded in 1892, it has as members both Improvement Societies and individual improvers. At the end of 1909 it had 180 members which had become 300 in 1911. Its organ is the "*Schweiz. Blätter für Ornithologie u. Kaminchen*."

3. *Federation of the Poultry and Rabbit Improvement Societies of Eastern Switzerland:* dates from 1907 and had 25 sections with 88 members. According to the results of a special enquiry, it had at the end of 1911, 8,273 head of poultry and 2,640 rabbits.

4. *Federation of the Ornithological Societies of Latin Switzerland:* founded in 1901, it had 750 members. It publishes weekly "*L'Aviculteur pratique et sportive*."

5. *Swiss Society of the Promoters of Beekeeping*: founded in 1861, it aims at the development of beekeeping, and especially proposes to introduce a national breed of bees, to fight the diseases of bees, to organize brood insurance, etc. It had at the end of 1909, 111 sections with 1,100 members. Its organ is "*Die Schweizerische Bienenzeitung*."

6. *Beekeeping Society of Latin Switzerland*: founded in 1876, it is active in the French speaking cantons, functions similar to those of the foregoing societies in the German speaking ones. It had 18 sections and 1,200 members. It publishes monthly the "*Bulletin de la Société romande d'apiculture*."

The following table summarises all the data for the first large group of associations, under the name of *Agricultural Societies and Agricultural Associations*. For 98 % of the 841 societies reported we have the number of members, 266,876. It is well, however, to note that this figure does not represent the real number of persons affiliated, since in the number of members of the Swiss societies with sections are included the cantonal societies and in the number of the members of these the local associations are included. There are also other cases in which the numbers are repeated.

TABLE IV. — *Agricultural Societies and Agricultural Associations.*

Associations	Number of Societies			Number of Members on January 1st., 1910
	Total	Number	%	
Local Agricultural Associations . . . . .	494	482	97.6	60,084
Local Ornithological, Poultry and Rabbit Improvement Societies . . . . .	158	156	98.7	8,153
Local Beekeeping Societies . . . . .	121	120	99.2	7,330
Cantonal Agricultural Societies with Sections . . . . .	22	22	100	90,969
Cantonal Beekeeping Societies with Immediate Members . . . . .	8	8	100	3,987
Societies of Pupils of Agricultural Schools . . . . .	15	15	100	4,169
Cantonal Ornithological Societies . . . . .	11	11	100	2,741
Cantonal Beekeeping Societies . . . . .	16	16	100	4,221
Cantonal Agricultural Societies with Sections . . . . .	2	2	100	69,517
Swiss Beekeeping Societies with Immediate Members . . . . .	3	3	100	439
Swiss Ornithological Societies . . . . .	4	4	100	6,610
Swiss Beekeeping Societies . . . . .	2	2	100	8,656
Total . . . . .	856	841	98.3	266,876

(To be continued).



## Part II: Insurance

### FRANCE

#### FORESTRY INSURANCE IN FRANCE.

##### SOURCES:

- 78 (Maurice): L'assurance agricole contre l'incendie (*Agricultural Fire Insurance*). 1 vol. 8vo. Cahors and Alençon (Coueslant Press), 1911.
- NOTE: Assurance des forêts contre l'incendie (*Insurance of Forests against Fire*) Pamphlet. 8vo. Le Mans, Benderitter, 1911.
- NOTE: Assurance des plantations résineuses contre l'incendie. (*Insurance of Plantations of Resinous Plants against Fire*). Pamphlet, 8vo. Le Mans, Benderitter, 1912.
- ROMBES (Paul): Défense des forêts contre l'incendie (*Defence of Forests against Fire*). Bordeaux, 1911.
- ROMBES (Paul): Les syndicats forestiers (*Forest Owners' Syndicates*). Bordeaux, 1906.
- QUOT: Incendies en forêt (*Forest Fires*), Paris, 1904.
- LIÈS-LACROIX: Les incendies dans les forêts de pins des Landes de Gascogne (*Fires in the Pine Forests of the Gascon Landes*), 1900.
- RENDU du Congrès international de sylviculture, 1900 (*Report of the International Forestry Congress*), 1900.
- RENDU du Premier Congrès International de l'Aménagement des Montagnes (*Report of the First International Congress for the Management of Forests*).
- Revue des Eaux et Forêts (*Review of Waters and Forests*).

#### § I. FOREST FIRE RISKS.

The risk to which agricultural produce is exposed from fire is specially grave in the case of forest fires; both on account of the area exposed to the risk and the frequency of the disaster.

It is not necessary for us to speak here of the importance of forests in a country, whether in reference to the climate and the distribution of water or in view of their commercial value and the dangerous consequences of deforestation may involve. Now one of the principal causes of the destruction of forests, to which in general enough importance has not

been given, is evidently fire, although among the numerous studies as bills proposed in connection with deforestation, very few consider this as one of the causes. This omission is probably due to the fact that fire more particularly attacks certain regions and seems not to rage in all forests. This is, however, an error, for if forest fires do not often assume the form of catastrophes outside of certain regions and must thus be treated separately, it is no less true that fires are of general occurrence and more or less; forests are exposed to them, and that, owing to their frequency and disastrous consequences, the damage they occasion must be considered one of the most important causes of deforestation.

The subject of forest fires should be, however, especially studied in three regions, namely: the Maures and Estérel, the Landes of Gascon and Algeria. In these three regions hardly a year passes without thousands of hectares of forest being ravaged by terrible fires, extending times over considerable areas, with destruction of houses, livestock, sometimes even of human life, and spreading ruin and desolation everywhere in their course.

In the Maures and Estérel, ten thousand hectares were destroyed by fire in 1892. Estérel is the mountain mass most subject to disasters of this kind: 525 hectares were laid waste in 1903 and 2,220 in 1904, more than 20 fires. Between 1890 and 1904 on an average 803 hectares a year in an area of 15,754 hectares were burned on these mountains.

In Algeria considerable areas are burned every year and the loss amounts to several million francs. Between 1876 and 1884 they were calculated at 13,400,000 frs. In 1881 alone, 169,000 hectares, and in 1902 more than 135,000 ha. fell a prey to the flames. In the years 1892 and 1903 the region was subjected to specially severe trials. In the first of these years 140,000 hectares valued at 3,700,000 frs. were burned; in the second, nearly 100,000 valued at 5,300,000 frs.

Finally, in the Gascon Landes, the pine forests are more subject to fires than elsewhere. Indeed, in dry weather, a spark is enough to kindle conflagrations it is difficult to extinguish.

In 1870, in the department of Lot-et-Garonne, 2,261 hectares were burned, causing an estimated loss of 791,490 frs.

Between 1869 and 1871, in the department of Gironde, fire consumed 36,000 hectares, valued at about 16 million frs.

Between 1869 and 1872, in the department of Landes, 25,467 hectares were destroyed by fire and the damage was estimated at 5 million frs.

In more recent years, we find the disasters scarcely less serious. In August, 1891 a fire broke out in the pine forests of la Gironde: a few minutes the flames driven by the storm, had covered an area of more than 15 square kilometres, causing the death of ten persons. In 1892, 10,000 hectares were destroyed by fire. In 1893, in a period of 184 days, from May 1st. to September 1st., there were 132 fires in Gironde damaging 35,589 hectares belonging to 820 landowners. The losses were calculated at nearly 6 million francs. In the arrondissement of Bordeaux alone more than a tenth part of the area of moor and pine forest was destroyed.

In the *Revue des Eaux et Forêts* for August, 1901, we find the following statistics of fires in the Landes of Gascony for the period 1893-1899:

Year	Area Burned			Total — hectares	Loss — France
	Gironde — hectares	Landes — hectares	Lot et Garonne — hectares		
3 . . . . .	35,590	8,597	2,364	46,551	9,500,000
4 . . . . .	567	324	4	875	155,000
5 . . . . .	402	61	0	463	58,910
6 . . . . .	34	418	0	352	71,230
7 . . . . .	141	87	2	230	73,540
8 . . . . .	9,973	6,770	353	1,707	3,062,280
9 . . . . .	11,181	2,352	448	13,981	1,665,470

Finally, between 1899 and 1907, more than 80,000 hectares fell a prey to the flames in the same region and the year 1906, one of the most unfortunate in this respect, was almost as disastrous as 1893.

Other forests are also sometimes ravaged by great fires. Thus, July, 1911, fire devastated more than 300 hectares in the forest of tainebleau. These figures show the considerable risk of loss through forest fires in France.

## § 2.1 CAUSES OF FOREST FIRES.

The institutions for defence against damage from forest fires may be divided into two objects :

1st. to prevent fire breaking out or, when it has broken out, from spreading.

2nd. to compensate for the losses caused by it.

Some will, therefore, have for their object measures for the prevention of fire, others compensation for losses. Often these two ends are united in the same institution: yet, as M. Maurice Brun has excellently said, in an important monograph from which we shall borrow largely, it is above all under the form of syndicates that the institutions for prevention have been founded in France, whilst those for granting compensation for losses were formed as mutual societies.

Before commencing the study of the first group of institutions, we shall, in the first place, examine the measures which appear most efficacious for the prevention and limitation, as far as may be, of forest fires, and, even before that, indicate the principal causes of these disasters. This is the best way of showing what steps should be taken for their prevention.



The general causes of forest fires are almost the same in every part of France, with but few exceptions, and although they are many, they may be reduced to five chief heads, namely :

- 1st. Malice;
- 2nd. The desire of the pastoral population to increase the extent of their pastures;
- 3rd. Negligence and imprudence;
- 4th. Lighting of fires in or near forests,
- 5th. Sparks from passing railway engines.

1st. *Malice*. — Of all the causes of fires, malice is undoubtedly the most frequent. In face of so many disasters of which the author cannot be discovered, it is natural to attribute them to wilful crime. Facts besides confirm the hypothesis. When it is proved that a fire broke out at the side of a road or path, it is logical and natural to suppose negligence or imprudence, but it is found that fires most usually break out in wild and lonely places where the presence of a man is only to be explained by malicious intention. The fire generally appears in various places fairly near each other, or regularly at intervals of a few days. When many fires break out under similar conditions, they can only have been kindled by criminals. To this may be added material proof in the form of half burned fuse often found near the place of the fire which, burning slowly, gives the criminal time to create an alibi. It was the case, for example, when the terrible fires of 1893 and 1906 devastated the departments of Gironde and Landes.

It is therefore evident that malice is the chief cause of forest fires. It is, also, very easy to commit the crime in the solitude of a forest.

The chief motives for such crime are revenge and self-interest. It is in fact a weapon with which one can strike and which allows of satisfying that thirst for revenge the vexations the peasants so frequently suffer give rise to.

2nd. *The Desire to Increase the Extent of Pastures*. — Malice is often encouraged by another motive, self-interest, but self-interest is understood : the desire for additional grazing ground. Pastoral populations, especially in the mountains, in Algeria, and in the Gascon Landes set fire to forests in order to increase the extent of their grazing ground as grazing in burned forests is authorized.

The nomadic Arab shepherd is often guilty of this crime, setting fire cunningly to the forest, repeatedly, to the number of 20 and 30 times.

The same thing happens in the Gascon Landes, for, before the re-plantation of the country, the rural population gave themselves up to stock improvement, on the free common land : when their pasture lands were reduced in area owing to the land being sown, the shepherds often resorted to burning the young plantations in order to win back the land. The forest has gained from the moor.

3rd. *Negligence and Imprudence*. — Imprudence and negligence are also frequent causes of forest fires. The ground in forests and moors is generally covered with heather, bracken and tufts of dry grass.

forming a very inflammable mass. A spark is enough in summer to kindle a fire which very rapidly extends.

Hunters or labourers who smoke often render themselves involuntarily responsible for disasters, when they throw away matches especially those that kindle at the slightest friction, or fuses that are difficult to put out.

4th. *Lighting of fires*. — Impudence and negligence are also shown in lighting fires within or near a forest. This is done by workmen preparing their food, burning charcoal or making tar, without the necessary precautions.

Sometimes again it is the owners of land near the forest who, before sowing their fields, in order to have a better crop, burn off the dry grass, without taking care that the fire does not extend to the plantations bordering on their farms.

The burning of moorland, in order to have better grazing ground, is usual especially in the Gascon Landes and Algeria, is also one of the principal causes of fires in these regions. In fact, after a certain time, the heather and the furze so increase and develop ligneous fibre to such an extent that the fescue grass which serves to nourish the flocks is choked. Then the shepherds set fire to the moor to burn all the ligneous plants; when the fire is not carefully controlled, it gains the neighbouring forest, without it being possible to stop it.

5th. *Railway Engines*. — The passing of railway engines through forests has been a frequent cause of forest fires. The engines in fact let live cinders escape from their smoke stacks and their cinder box lets out burning coals.

Forest fires have also been attributed to lightning, an extremely rare cause; to fire balloons sent up at village festivals (balloons inflated with warm air, and provided at starting with a sponge soaked in alcohol and petroleum closing the aperture); to fragments of bottles acting as burning lenses on the dry grass; lastly to the fall of meteors which become incandescent in crossing our atmosphere and explode when they fall.

Let us add with M. Brun that forest fires are above all frequent towards the end of winter and in summer. At that time in fact the turf is quite dried up by the sun and this is favourable to the breaking out of fires and their extension. Once kindled, the fire finds a very combustible material in the bushy underwood.

In calm weather, the nascent fire dies out of itself; on the contrary, there is wind, its progress is very rapid and in a few moments it travels great distances. When the fire breaks out in seed plots of resinous plants, still without marketable value, these are completely burned. If the fire breaks out in a plantation at least more than twelve years old, the trees are not burned; only the leaves and twigs are destroyed; the trunk of the tree remains, but the tree will die. It keeps, however, its market value, but the owner must proceed at once to sell, for it will soon die and will only have the value of dead wood.

### § 3. MEASURES FOR THE PREVENTION OF FOREST FIRES.

For a long time a way has been sought to prevent the considerable losses occasioned by forest fires or at least to reduce their importance. Two methods of prevention of this class of disaster have been advocated: the cutting of firebelts called *pare-feu* or *garde feu*, and the destruction of the underwood.

1st. *Firebelts*. — These are strips of land, more or less wide, cleared of all vegetation and of all resinous plants and kept absolutely free of brushwood.

These belts, which generally intersect at right angles, are made at the borders of forest properties, or along the railway lines or in the forest masses which they divide into several portions. The cutting of these belts may be considered from two different points of view, for they have to serve a double end: the first object is the division of the forest into a certain number of parts of greater or less area to permit of the isolation of the fire in the part where it has broken out. We know in fact that the cause of the great extension of fires is the continuity of wood masses, which permits of the fire traversing vast areas. The effect of the fire belt cutting the forest into a number of separate divisions is to circumscribe the fire and limit the extent of the disaster. The theory is that the fire, on reaching these belts destitute of inflammable material, will die for want of nutriment.

Unhappily, this is not always the case in practice, and it is seldom we see the fire die out of itself on arriving at the fire belt.

To enable a firebelt to arrest the course of the flames it should be given a very great width, of from 60 to 100 metres; but this would have the drawback of leaving immense unproductive areas and above all would impose a heavy burden on the landowners who have to maintain the belts.

The second and real object of the firebelt is the formation of a base of operations for combating the fire, lines of defence where the persons whose duty it is to contend against the disaster may assemble, whatever the means they employ.

These cuttings, varying in extent, must be bounded on each side by a ditch, which will form a real impediment to the advance of the fire along the dry grass. They must be placed at distances varying from 1 to ten kilometres, according to the region, thus cutting the forest into portions of from one to a hundred hectares. As experience teaches the firebelts that have to serve exclusively for the facilitation of defence against fire should have a breadth of from 15 to 20 metres at least. They must in fact be sufficiently wide to afford a sufficiently secure vantage ground for the organization of assistance under the most favourable conditions. If the width were less, the workmen would sometimes run the risk of their action being impeded by the heat of the fire.

The firebelts must be kept completely free of brushwood and must be completely cleared at least every three years. This is indispensable in the case of belts of from 10 to 15 metres. But it has been questioned whether in the case of broader firebelts it be indispensable to keep them free of vegetation, and if it were not better to plant them with broad leaved species or to bring them under cultivation. This utilisation of the firebelts would constitute a real progress, for when profit is added to the advantage of protection from fire the landowners will be more ready to incur the necessary expense. There would be a direct advantage in clearing and it would permit of a decrease in the cost of maintenance. In fact in the dunes of Gascony they already plant broad leaved species in double line forming alleys. Two firebelts in the forest of Soulac are very agreeably adorned with a double row of oaks (*Quercia pedunculata*), maple, ash, etc. Other attempts have been made in the forests of Hourtin and Amélie (Gironde). Other trees recommended for the purpose, besides the above, are the cork oak, the common oak, the holm oak, poplar, birch and mulberry. In Algeria, they have contemplated making fire resisting hedges of opuntia, under the protection of which crops could be cultivated. The merit of this plant, the tissues of which are replete with water, is that it cannot be consumed by fire: so it is destined to play an important part in connection with firebelts, its resistance to fire having been proved on many occasions.

As to the plants that may be grown on the firebelts, vines may be used, if the stocks are sufficiently far apart to prevent the fire passing from one to the other. Successful attempts have been made in the department of Landes. The cultivation of certain plants suitable to sandy soils such as allium, Jerusalem artichokes, potatoes and lucern has also been recommended.

In the State forests in the Gascon Landes, the area of the firebelts altogether 945 ha. 886 sq.m., representing an initial expenditure of 4,260 frs.

The communes and private landowners, on the contrary, have taken steps for the protection of their forests against fire. Some individual landowners have made large cuttings of from 10 to 30 metres, to use at the same time as paths for their livestock; but these firebelts are so badly kept that they are of little use. Others have limited themselves to clearing areas round their forests two metres wide, which might be of real service, if properly cleared from time to time.

#### 2nd. *The Destruction of Underwood and Clearing of Moors.*

The second means advocated for prevention of forest fires consists in the destruction of underwood and the clearing of moors. It is known in fact that the cause of the rapid extension of fires is the existence of dense thickets of heath and bracken intermingled with dry grass in the moors and under the forests. These are very combustible in warm weather; a spark is enough to kindle a conflagration. If then the underwood and dead wood were periodically removed, one of the principal causes of fires would disappear.

Unhappily, this removal of the underwood cannot in practice be carried out under economically suitable conditions. The cost of clearing varies from 50 to 100 frs. per hectare; the expenditure is thus out of proportion to the value of the soil. So now only the firebelts are cleared, the cost entailed is still very high, on account of the rapid growth of vegetation.

The removal of the underwood is, however, carried out in districts where the produce derived from it is used in manufactures and agriculture, especially in forests in the neighbourhood of towns or villages or near métairies. The grass cut is utilised on farms and thus diminishes the cost of its removal.

Among the uses to which this dry herbage is put, we must mention its employment as stable litter, and for manure, instead of straw, which costs more. This use which has long been in vogue in a part of Land has given excellent results.

3rd. *Small Fires.* — Among measures of defence against fire let us finally mention small fires, a very ancient means only met with in Provence and Algeria. Advantage is taken of the winter, when the soil is comparatively moist, to kindle small fires in the forests to burn away the underwood and pine needles without danger to the trees.

This practice has incontestable advantages, in view of its small cost and above all because it removes one of the most important causes of the spread of forests fires. But it has also drawbacks. It damages a certain number of trees, it destroys the seedling and seeds lying on the ground, and, if frequently repeated, it ends by impoverishing the forests. Let us add that, in cork forests, it would even compromise the harvest.

These small fires were authorized by the special law of July 21st 1890 for the Maures and Estérel, which laid down rules with regard to them we shall mention presently.

#### § 4. LEGISLATION ON PROTECTION OF FORESTS FROM FIRE.

We must, however, first glance at the general legislation for the defence of French forests against fire.

*Legislation applicable to all Forests.* — There is a fairly complete body of laws on the subject: there is first of all the decree of September 28th, 1791, still in force, which, in article 10 of chapter II enjoins, "that any person kindling a fire in fields less than 50 toises from houses, hearths, orchards, flour mills, straw or hayricks, shall be fined a sum equal to the wages for twelve days' labour and shall in addition pay for the damage done." The culprit may, besides, in certain cases, be condemned to imprisonment in the municipal gaol.

In the second place, by article 458 of the Penal Code a fine of 100 francs at least and 500 francs at most is imposed on "whoever occasions

turning of other people's property . . . by means of fires lighted in fields at less than 100 metres' distance from the houses, buildings, ts, moors, woods, orchards, plantations, hedges, straw or hayricks, s of seed or fodder, or by means of fire and lights brought or left out sufficient precautions."

Article 148 of the Forestry Code forbids the bringing or the lighting re in and within the distance of 200 metres from woods and forests, declares the culprit, in case of disaster, liable to the penalties imd by the Penal Code and any damages that may be awarded.

Article 458 of the Penal Code is of more general application than the stry Code. It imposes a fine on any person guilty of causing a forest involuntarily, in one of several ways mentioned in the article. The n prosecuted for such crime may escape payment of the fine, except re case of his having kindled a fire at less than 10 metres' distance, shows that the disaster occurred in spite of his vigilance, or was result of an accident or due to circumstances beyond his control. The liability established by the Penal Code is therefore very nsive and may be ground for legal action in cases in which article does not apply, but there must have been a disaster. On the other l, when the crime of wilful arson is not established, if the facts proved ast the accused come within the terms of article 148, especially when disaster is due to fires kindled within the 200 metres belt, the court apply this article to the case. Article 148 of the Forestry Code for- the bringing of fire into forests by others than the owners, this pro- tion being aimed above all at herdsmen, commoners and riparians. oes not forbid proprietors kindling fire in their own forests. Nobody pected himself to wish to burn his own property; but as one may untarily start a fire on one's own land and it may destroy the neigh- ing property, one is only permitted to light a fire in one's own forest distance of 200 metres from one's neighbour's forest.

The prohibition of the Forestry Code allows of no excuse, even of umstances beyond one's control, while the Penal Code allows this. prohibitiona pplies to every kind of fire, especially grass burning, ch is, besides, forbidden by the law of September 28th-October 6th., t, within the distance of 200 metres from forests. But grass burning, er certain restrictions, is continued in many localities in deference sage or in virtue of decisions issued by the Department or the lects.

Article 475 of the Penal Code, the severity of some of the clauses hich is increased by article 478 of the same Code, extends the penalty oed by article 458 to all individuals who have refused or neglected ind assistance in cases of fires, and art. 149 of the Forestry Code ees special penalties on commoners who refuse or neglect to give ance in case of disasters in the woods in which they have rights se.

Finally, the departmental administrators were charged by law of De- ber 22nd., 1789-January 8th., 1790 to take measures for the public

safety, which include naturally those to be taken in case of fire, prefects have succeeded to these duties. On the other hand, the Code of June 21st., 1898, article 10, declares that the prefect, after consultation with the General Council and the advisory chambers of agriculture, "shall order the necessary precautions for the avoidance of danger of fire and notably the prohibition to kindle fires in fields except at a certain distance from buildings, vineyards, orchards, hedgerows, forests or moors belonging to others. He may, at the suggestion of the Mayor, temporarily remove the prohibition so as to permit or facilitate certain labour."

The laws of August 16th.-24th., 1790, July 19th.-22nd., 1791 and April 5th., 1884 gave the Municipal Councils the right to take steps for the prevention of accidents and to supervise everything relating to public safety.

By virtue of all these provisions the prefects and mayors may order prohibiting the use of fire even by the owners of the land in certain seasons or regulating the use of it. These orders, numerous in the departments where the danger is greatest, are authorized by article 471 of the Penal Code.

The law imposes severe penalties on incendiaries: by article 471 of the Penal Code those who set fire to forests wilfully and maliciously are punished with hard labour.

Lastly, there is a guarantee against fires in legal liability, as articles 1,382, 1,383 and 1,384 of the Civil Code make it compulsory to repair all damage occasioned to others.

*Legislation applicable to Woods subject to the Forestry Régime.* — The case of woods subject to the Forestry Régime the laws are still incomplete.

Article 151 of the Forestry Code forbids the installation of charcoal furnaces or kilns for the making of plaster, bricks or tiles, in forests within less than a mile from a forest, without authorisation.

Articles 38 and 42 forbid contractors to make ditches for charcoal and to light fires except at the spots indicated by the forestry service.

This legislation for forests coming under the forestry régime is completed by a series of circulars making regulations with a view to limiting the danger from fire. The results have been excellent.

*Special Legislation for the Maures and Estérel.* — The forests of the Maures and Estérel are chiefly composed of seaside pines and cork oaks. The numerous fires by which they suffer are encouraged by the tall dense evergreen wood which forms an inextricable thicket and by the frequent lightning fires. Other reasons assigned are that the population have been for generations accustomed to these fires, the individualistic character of this population, and finally the unreasonable arrangement, by which the land of the region of the Maures and Estérel, by nature very homogeneous, has been divided between two departments, four arrondissements and four forest inspectors' districts.

This district occupying a special position with regard to risk from fires, it has been thought advisable to make special laws for it, adapted to its natural and economic conditions. This was done by the law of July 27th, 1870, substituted by that of August 19th., 1893. The latter re-enacts the first and completes it, as far as concerns the fire belts the Railway Companies have to make and the institution of lines of defence : The following are the essential provisions :

1st. From June 1st to September 30th., absolute prohibition of the use of fire in forests and on moors or within 200 metres' distance of forests or moors, whether by proprietor of the land, or by others, under penalty of imprisonment for a period of from 1 to 5 days and a fine of from 20 to 500 francs. Exception is only made in the case of landowners authorized by the prefect, under certain conditions, to make use of fire for lighting charcoal furnaces and for the use of factories, subject in case of forest fires, to payment of the damages.

From October 1st. to May 31st., authorization of all use of fire, even of fires and grass fires, in forests and on moors where there are fire as enjoined by the present law, subject, in case of disaster, to the penalties imposed by article 458 of the Penal Code and payment of damages.

2nd. Power accorded to forest guards or specially sworn guards to make inquiry and ascertain crimes contemplated in this law, committed in private woods and forests.

3rd. Right of any landholder who has cut and cleared on the boundary of his land a firebelt from 20 to 50 metres in breadth from which all resinous plants have been removed to compel his neighbour to erect a defence on his adjacent land.

4th. Obligation of the Railway Companies at their own expense to make firebelts, 20 metres broad on each side of the road on the adjacent land, with right of the landowners to remove their produce or to claim compensation for the wood of resinous plants cut down.

5th. Selection of the officers to manage the work of assistance.

6th. Formation of a network of roads of defence, assimilated to parish roads, with the help of State subsidies at the rate of 3,000 frs. per kilometre but not exceeding 600,000 francs.

The carrying out of these prescriptions is assured by fixed officers and itinerant guards, circulating in the district or watching from the heights.

Since firebelts round forests are optional, as yet with very few exceptions there are no private forests bounded by them. Only the Government has made them round crown forests and those subject to the forestry régime. It has obliged the neighbouring landowners, when it had the right, to follow its example, sometimes in spite of their active resistance. The firebelts along the railways are, on the contrary, all completed to-day. If private landowners have made such opposition to this provision of the law, it is chiefly through a spirit of conservatism.



Another reason is that the law imposes too heavy burdens on either through the cost of maintenance of the firebelts or the loss of revenue from considerable areas of land. In fact, in view of the subdivision of land in the region of the Maures and Estérel the application of the law is materially impossible. It would have been necessary sometimes to clear the third part of a holding; thousands of hectares would thus have been rendered unproductive.

There is no doubt of the advantage of a supplementary network of roads considered only as protective belts. Studies have been made on the subject, but the Public Works Section of the Council of State expressed its opinion in 1901 that the grant of 3,000 frs. per kilometre only promised in view of an expenditure of at least 6,000 or 7,000 frs. per square kilometre, and it would be quite exceptional for the one contemplated to be so high. The Minister of Agriculture therefore declared that the law would not apply, unless amended by Parliament. It is now being remodelled.

*Algerian Forestry Legislation.* — Up to 1903 the forest laws in Algeria were the same as those for the mother country, except in a few points regarding the prevention of fires: they were quite insufficient. Between 1876 and 1902 there were 1,080,000 hectares burned. The reasons for the inefficacy of the law were manifold. The chief was that the Arabs, finding their century old habits interfered with by the law, evaded it with impunity. The penalties were often excessive. They sometimes exceeded the value of the wood destroyed, or were imposed unjustly. Fire was almost absolutely prohibited throughout the country by the Government to grant any application; and it was materially impossible to prevent the natives burning away the brushwood which hindered the free passage of their flocks. This was in fact the only practically realisable way of renewing pasture over such extensive areas. Under these conditions, with this restrictive legislation, led to acts of impotence and anger.

The law of February 21st., 1903, completed by an Order of the Governor of August 20th., 1904, attempted to remedy this state of things.

We shall summarise its provisions for the protection of forests in general and those specially intended for forests subject to the *forêt domaniale* régime.

(A) The provisions applicable to forests in general concern the prevention of fire, grass fires, preventive measures, supervision and the extinction of fires.

1st. *Use of fire.* — In principle it is forbidden during the whole year to light fires in the open air in forests or woods or within a distance of 200 metres from forests. Exception is, however, made in behalf of the owners of the land, between November 1st. and June 30th., if the holdings are separated from those of their neighbours by a clear firebelt, free of all resinous plants, subject to payment of damages in case of the extension of fire. But from July 1st. to October 31st., fires are absolutely forbidden except within buildings. Inside of these

fire is regulated by order of the Governor. This order enjoins the buildings be surrounded by a belt cleared of brushwood 25 metres width.

2nd. *Grass fires.* — Grass fires are likewise regulated by the Governor and supervised by officials, must be made at a distance of at least 500 metres from woods or forests, and 500 metres at least from these in the period from July 1st. to October 31st., subject to payment of damages if the fire extends. By order of August 24th., 1904, no grass fire is made between November 1st. and June 30th., without authority of the Government, which shall give order for the necessary preliminary measures. From July 1st., to August 31st, the burning of moors is in principle forbidden. They may, however, be authorized if the moors are separated from the forest by a belt, a kilometre wide, from which all vegetation has been removed, or if it is a matter of burning heaps of cut wood.

3rd. *Preventive Measures.* — As a preventive measure the law provides that a proprietor of forests and moors not cleared may be ordered by his neighbour, owner of adjacent land of the same character, to make and keep a fire belt of from 10 to 100 metres. This belt must be of equal width on each of the adjacent holdings, free of resinous wood and must be kept clear.

The Railway Companies must keep the roads crossing forests free of vegetation between June 1st. and November 1st. The Government may even order fire belts 20 metres wide to be cut and maintained at the expense of the Companies. The landowners in case of damage have a claim to compensation, but they may always remove, within the time fixed by the decision of the Government, all or part of the produce from the spot.

4th. *Supervision.* — To ensure supervision, the Governor General shall every year, from July 1st to November 1st., organize a special service obligatory on the commoners and, in default of them, on the able-bodied men of the forest communes. This service may be reinforced, if necessary, by the troops.

5th. *Extinction of Fires.* — The native population is obliged to help in extinguishing the fire on a verbal demand made to the head of their group by an administrative or forestry agent, under penalty, in case of refusal without good reason, of a fine of from 20 to 500 francs and, in certain cases, of imprisonment, for a term varying from 6 days to 6 months. The penalty is increased in the case of commoners by loss of their rights of usufruct for a period varying from three months to five years.

(B) With regard to forests subject to the forestry régime, let us only mention that the law forbids any establishment necessitating the use of fire in combustible materials in woods or forests or at a distance of less than

500 metres from woods and forests, without special authorization, the penalty of a fine of from 100 to 500 francs and the demolition of establishment. Lastly, it forbids the installation of any building storehouse of inflammable material within or at a distance of less than 100 metres from woods and forests under penalty of a fine of from 50 francs.

Since the law of August 19th., 1903 and the order of August 20, 1904, the provisions of which have been constantly and steadily applied, forest fires have appreciably decreased both in number and importance. We give below the statistical return of fires during the period 1901-1910 obtained by M. Maurice Brun from M. Boutilly, Inspector of Forests at Algiers.

Years	Total Area Burned — hectares	Estimation of Damage — francs	Number of Other Fires Inside —
1901 . . . . .	9,685	259,110	10
1902 . . . . .	141,141	3,668,780	4
1903 . . . . .	94,398	5,329,047	11
1904 . . . . .	2,759	90,093	48
1905 . . . . .	7,676	274,084	5
1906 . . . . .	9,126	399,037	3
1907 . . . . .	4,457	92,809	5
1908 . . . . .	6,539	182,339	6
1909 . . . . .	9,749	653,049	15
1910 . . . . .	22,875	337,635	—
Total for the Ten Years	308,405	11,285,983	107

#### § 5. FORESTRY ASSOCIATIONS FOR DEFENCE AGAINST FIRES.

It is materially impossible for many landholders, if not for all, to protect their forests by their own unaided efforts, on account of the heavy burdens entailed. Association alone permits of the work of defence being advantageously undertaken, and alone can make the preventive organization effectual, while reducing the expense for each individual.

Such association is realised by the forestry syndicates for defence against fire and the syndicate associations. The object of these groups take all precautionary measures of a character to prevent the break-out and extension of forest fires. The object is generally threefold : making and maintenance of fire belts, supervision of the forests and arrangements for assistance in case of fires.

We shall first study the syndicates, by far the most important

1st. *Forestry Syndicates for Defence against Fire.* — The forestry syndicates for defence against fire are regulated by the law of March 21st., on professional syndicates. They are voluntary institutions and created at a not very recent date. Already, in 1887, in the department of Landes, on the initiative of the prefect, an enquiry was held to consider the advantage of founding forestry syndicates for defence against fire. Two Municipal Councils having been consulted, twenty-two preferred themselves in favour of the immediate organization of these ; ten failed to reply. Some years later, syndicates of this character found forming themselves spontaneously in a certain number of communes in Landes.

The first in date was that of Onesse-Laharie, the organization of which is remarkable. The landowners of this commune, in order to put a stop to numerous fires that devastated the region, formed a syndicate of waterers and extractors of resin, in order to organize the defence of the interests of the commune, as far as concerns forests.

This syndicate ordered firebelts to be cut on the borders of each commune, making use of the existing roads and paths as far as might be ; ordered them to be kept completely free of brushwood. It has formed a brigade of all the inhabitants.

At first the members contributed 10 centimes per hectare. With a small sum, the syndicate contrived to maintain the fire belts and to have supervision in the dangerous season : to distribute 400 horns to the inhabitants to serve to indicate, by various modulations, the place where a fire has broken out. Thanks to these wise precautions, in a single year they were able to escape 40 fires.

Following the example of the commune of Onesse-Laharie, similar syndicates have been formed in several communes of the Landes, such as the syndicate of resin extractors of Marensis, which is of great importance in other parts of France, as in Sologne, Beauce and Double, a fertile region of seaside pines often ravaged by dangerous fires.

In this part of France, the inhabitants have made every effort to improve their means of defence against the scourge and have founded a syndicate under the name of *Inter-departmental Committee of the Territory of the Charentes and Gironde.*

The latter department was slower in following the syndicalist movement. The matter was definitely laid before the General Council in August, 1898: it pronounced in favour of the association of the landowners in forestry syndicates. It was, however, only

in 1906 that the first syndicate of the kind appeared, under the name *Foresters' Syndicate of the Canton of Pessac*.

This syndicate was composed of landowners and agricultural labourers and formed for a period of 5 years, with a tacit understanding of renewal. Its object is to defend the territory of the canton against fire in the pine forests and to repair the damage done.

It meets its obligations out of its members' yearly contributions. These contributions are in the case of the landowners of 100 hectares 18 frs. 75, for those of between 100 and 200 hectares 25 frs. 50, for those of between 200 and 300 hectares 35 frs. 75 and so on. In the case of the labourers, the contribution is only one franc.

The total receipts are divided into three portions, serving:

The first, for the realisation of preventive measures, such as the clearing and maintenance of fire belts, the sinking of wells, the purchase of hand pumps, and for bonuses to the guards and overseers;

The second to meet the cost of extinguishing fires;

The third, which is twice the amount of the first two units, is a guarantee fund, constituting with capitalised interest, a reserve to be used, in case of disasters, to compensate the sufferers, whether landowners or labourers.

The management of the association is entrusted to an office, to which commissioners appointed at the general meeting give their assistance. The general meeting is supreme; its approval is required for every act, and in the last resort it settles every difficulty and dispute. It ensures the scrupulous observance of the rules and inflicts fines for contraventions.

The communal or cantonal unions formed on the same model have been invited to affiliate themselves to the syndicate of the Canton of Pessac, in order to form a federation. This Union would be useful for the vision of the communes with an interdepartmental network of fire brigades towards which each association would co-operate in its own district and for the study of matters of general interest. Its duty would be to increase the means of communication (telephones, etc.) among the members or for these with the urban centres, and to approach the Insurance Companies with a view to the reduction of tariffs, etc.

The organization of this institution appears excellent. We must, however, recognise that compensation for damages is only imperfectly assured. The syndicate only undertakes to compensate members in accordance with its resources, and in proportion to the losses sustained. Now its resources are insufficient in comparison with the known losses. In case of disaster, the landowners would receive very small compensation, insufficient to make up for the losses caused by the fire. But this is the defect of all local insurance, the only guarantee of which is a reserve fund, and *a fortiori* of insurance against fire in pine forests, on account of the extent each disaster ordinarily assumes. There is only one remedy for this; reinsurance of one or more degrees. The founder of the landowners' syndicate of the Canton of Pessac counts in fact on the formation

ederation of all the forest owners' syndicates, to give full compensation to all sufferers, and organize such reinsurance amongst them.

In every case, in the matter of forest fires, we must first seek to prevent the disasters in order to diminish their seriousness and frequency; and the only way by which one day to be able to give compensation for

Now this prevention has been admirably realised by the syndicate. It has acquired implements, and pumps and extinguishers invented by its founder; it has caused numerous pits to be dug in the forests. The country is intersected with well designed and well kept fire belts. Supervision is strict and assured by means of frequent rounds made by regularly circulating gangs. It has succeeded so to say in putting a stop to fires, which have become extremely rare in the district. These results, due also in some degree to the rules, which, under the title of "measures for prevention and combat," present a complete code for the management of pine forests and the extinction of fires. They have had the effect of bringing order into the management and organization of assistance, forming a fire brigade like a real little army perfectly equipped for war.

Similar syndicates have been formed in many communes. In the department of Gironde they have been formed at Saint-Jean d'Illiac, Saint-Hélène, Blanquefort, etc.

One of these unions deserves special mention: the syndicate for defence against forest fires called "Barp Landowners' Union," founded in 1908 for 4 years with a tacit understanding of its renewal.

It is managed by a commission of 10 members who appoint its officers. The Commission is bound to take the following precautions:

(1st) to cut several fire belts free of brushwood; (2nd.) to clean and plough the firebelts; (3rd.) to clear a belt  $1\frac{1}{2}$  metres wide along the edge of all the roads; (4th.) to organize a service of guards, to exercise supervision in the dangerous season with the assistance of the residents in the service of the proprietors.

The syndicate has bought pumps, and dug wells and arranges for instruction of the firemen, who are periodically exercised. Provision is made for its expenses out of an annual subscription, in proportion to the area of the holdings.

This association has given excellent results in the decreased number of fires due to the supervision it exercises and the precautions it has taken in the dangerous seasons.

However, the forest syndicates for defence against fire have been severely attacked. They are reproached with their liability to internal dissensions which hamper their action; with being deficient in authority, in decision at the critical moment. On the other hand, they sometimes encounter the ill will of some land owners who do not understand their own interest.

It has therefore been contemplated substituting the syndicates by more powerful associations regulated by law of December 13th., 1902.

2nd. *Syndicate Associations for Defence against Forest Fire.* Unhappily this law has not led to important results. Let us, however, mention, after M. Maurice Brun, the association of Petit-Saint-Ge near Chevanceaux (Charente-Inférieure). It has been formed, for an indefinite period, among the proprietors of forests, and moors wooded not, in the commune, and its object is the cutting and maintenance of fire belts and other defence works, their supervision and the extinction of fires.

The expenses are covered by an annual contribution fixed at the General Meeting. There is a right of way over the firebelts. They must be cleared by the proprietors before the 15th. of January, otherwise work will be carried out at the expense of the association which will profit by the produce removed.

In principle, the limitations and servitudes resulting from the cutting of firebelts, their maintenance and other precautions against fires give no right to any allowance or compensation if less than a tenth of the landed estate of a member is burdened by them. But in the case of a parcel of which more than one tenth is burdened, the proprietor may transfer it, in exchange for rural landed estate, to the neighbouring commune designated by the syndicate from among the members burdened or to be burdened to the amount of less than one tenth of their land property syndicated. This neighbour must then give in exchange a parcel relatively free of encumbrance of the same value, after estimation and selection by two private arbiters, chosen respectively one by each of the parties concerned, whose decision shall be final.

In default of a neighbour in the conditions above indicated, the commune more than the tenth of whose forest is burdened must be compensated in money by the syndicate, and the amount shall be settled by arbiters again chosen by the parties concerned.

## § 6. INSURANCE.

The insurance of forests against fires is very badly organized and in addition is very rarely met with. Nearly all the measures now taken against fire are simply preventive and we know how incomplete they are.

Before 1870 some insurance companies accepted forest risks. But it was established by depositions made before the 1872 enquiry into fires in the Landes of Gascony, both by the agents of insurance societies and the proprietors concerned, that the various companies insuring plantations in that region had rescinded their contracts during the large fire of 1870. After that, the landowners could no longer secure themselves against this class of disaster, above all in young plantations, even at the high premiums.

The fixed premium companies, only anxious to give their shareholders dividends, hastened, at the first disaster, to rescind their contracts and abandon this class of business.

Their calculations were mistaken, for if we take the average of the last fifty years, we see that the insurance societies would have made large profits. But what we must persuade ourselves of is that commercial insurance companies, only seeking profits for their shareholders, have a tendency to withdraw from business which like forest insurance is to some degree hazardous.

Such a situation was calculated to inspire serious anxiety; it amply illustrated the precarious nature of forest cultivation, since the insurance societies, always ready to incur risks in proportion to the advantages derived from a special operation, considered that one of the contract parties was exposed to such peril that no condition appeared sufficiently advantageous to cover the risk of loss.

For wooded land, the whole economy of which is based on an accumulation of annual revenue for a longer or shorter period, nothing could afford absolute security: this is the opinion expressed in a decision of the General Council of Gironde on August 31st., 1869:

At this date, the Commission charged to study the measures to be taken for the prevention of forest fires, and to render their effects less serious expressed itself as follows, in the words of its report:

"A means, not of combating the scourge or reducing its gravity, but of diminishing the disastrous consequences in each case, is insurance: in recent years, the great commercial companies, dismayed at the frequency of fires, and the difficulty of fixing the amount of the premiums, consequently, the dangers that must result, have, for the most part, after the other, raised their premiums and often even ended by absolutely refusing to insure such property.

In this deplorable position in which the pine forest owners found themselves and which necessarily led to a considerable decrease in the market value of their forests, the idea of a mutual insurance society to be formed among the proprietors themselves has naturally arisen in the minds of the most honourable; it has assumed form and been realised in the federation of mutual insurance societies against fire in resinous trees, to which the name of *Forest Owners' Union* has been given, with headquarters at Bordeaux, the field of action of which includes the departments of Gironde, Landes, Lot-et-Garonne, and the Charentes."

After this general statement, the report, coming to the examination of the rules of the society, showed that seventy three proprietors, representing already more than 5 million francs, had assented to the rules, and there was no doubt that their example would be followed and the capital of 5 millions fixed as the minimum guarantee with which the institution could commence work would speedily be formed. It added that the arrangements made while affording good security to the insured proprietors, were of a very prudent character and this foundation might



favour an increase of the means for the prevention of fire. It concluded by asking the General Council, in the name of the Commission which had pronounced itself unanimously favourable, for a vote showing the interest it took in this useful work.

These conclusions, which were adopted, reveal the anxieties of forest owners at the same time as they show the importance that the General Assembly attached to the formation of a mutual insurance society offering real security.

Already in 1869 it might have been hoped that an establishment of this nature, in course of formation under the patronage of the General Council of one of the departments most interested in the maintenance of forest wealth in the Landes of Gascony, would have been speedily formed, and, no doubt, this result would have been attained, but for the fresh increase of fires in 1870 and 1871. Owing to these conflagrations which assumed unusual proportions, the old insurance companies annulled their contracts, and it would have been inopportune at such a moment to attempt to realise the newly started idea of a mutual society.

The studies for the organization of the *Forest Owners' Union* were thus suspended. They were resumed in 1872 and there is reason to think that the holding of a public inquiry into the measures to be taken to prevent the return of fires had a favourable influence on the destinies of the association, which was, in fact, definitely constituted on April 8th, 1872.

To-day this mutual society has disappeared, probably after a great disaster.

Several similar attempts have been made since, with a view to improving the conditions of the 10,000 forest proprietors of the Landes of Gascony, who, with an enormous increase in their forest wealth, have continued exposed to the risk of fires. These may produce their ruin from one moment to another, with the destruction of plantations that have taken twenty or thirty years before yielding a return.

Among these attempts let us mention the *Forest Owners' Mutual Society*, founded on April 26th., 1909.

This is a fixed premium society with headquarters at Paris. Its business includes not only insurance against pine forest fires and the loss of the various kinds of produce that may be derived from them, especially resin, but insurance of all kinds of forests. The field of action of the association extends to the whole of France and the French colonies.

At the date of its foundation the question was asked whether the Mutual Society, of which the essential end was to guarantee resinous forests against damage from fire, would have any success in view of the serious nature of the risks.

For this end statistical tables were prepared, based on the number and importance of the disasters in previous years in the Landes of Gascony.

From the examination of these statistics it appears that a Mutual Society would offer great advantages in view of the progressive decrease

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the risk of fire in the last eight years. This is evidently due to increased means of prevention and the better organization of assistance measures which a Mutual Society would be the first to bring to action.

Estimating the premiums at 2 fr. 50 per hectare and the value of a hectare at 300 francs, the receipts in case all the proprietors had insured, in comparison with the losses sustained in the 42 years from 1858 to 1900 will give the results shown in the following table :

*Estimate of Revenue and Expenditure that might have***Receipts (1858-1873), 15 years:**

Forests of Gironde	327,000 hect.	} together 762,000 ha. at 2 fr.
Forests of Landes	435,000 "	
or annual receipts . . . . .		1,907,275
for 15 years . . . . .		X 15

**Receipts (1874-1888), 15 years:**

Forests of Gironde	315,200 ha.	} together 773,200 ha. at 2 fr. 50 per ha.
"    " Landes	468,000 "	
or annual receipts . . . . .		1,933,000
for 15 years . . . . .		X 15

**Receipts (1889-1900), 12 years:**

Forests of Gironde	357,800 ha.	} together 811,200 ha. at 2 fr. 50 per ha.
" " Landes	453,400 "	
or annual receipts		2,028,000
for 15 years		X 12

Total . . .

*Forest Owners' Society between 1858 and 1900.*

			Expenditure
ers in Gironde	25,170 ha.	} together 41,328 ha. at 300 fr. per ha.	
" Landes	16,158 "		
f Disasters . . . . .			12,318,400
o % saved . . . . .			2,479,780
			9,918,720
ters in Gironde	24,801 ha.	} together 39,682 ha. at 300 fr. the hectare.	
" Landes	14,881 "		
f Disasters . . . . .			11,904,660
20 % saved . . . . .			2,380,932
			9,523,728
ters in Gironde	62,168 ha.	} together 99,469 ha. at 300 fr. the ha.	
" Landes	37,301 "		
of Disasters . . . . .			29,840,700
20 % saved . . . . .			5,968,140
			23,872,560
			43,315,008
			81,940,125
			43,315,008
the Shareholders in 42 years . . . . .			38,625,117

Let us add to these figures those of the statistical tables for 1900-1908

Revenue 1900-1908		Expenses	
Forests of Gironde . . . . .	353,250 ha.	Disasters Gironde . . . . .	9,385 fr.
„ Landes . . . . .	475,325 „	„ Landes . . . . .	10,317 „
together . . . . .	858,275 „	together . . . . .	19,702 „
at . . . . .	2 fr. 50 „	at . . . . .	390 „
Say total . . . . .	2,146,437.50 fr.		
in 8 years . . . . .	17,171,500 „		
		Less 20 % saved . . . . .	5,910,600
			1,182,120
			4,728,480
		Shareholders' Profits	
		in 8 years . . . . .	12,443,020

The gross profit, then, which was 919,645 frs. per year for 42 years would have been 1,555,000 frs. a year for this more recent period. This proves the risks have decreased.

The Forest Owners' Mutual Society is regulated in accordance with the decree of January 22nd., 1868.

The liability of each member is limited to the amount of his annual contribution as established in his contract at date of admission.

The Council is authorised to refuse to undertake any risk, which for any reason, left to its own judgment, it considers it should refuse to undertake a risk for part of the value.

Although a mutual society would desire its members to keep all the risks, prudence has induced the management of the Society to avail itself of reinsurance, which makes it possible for it to guarantee its members very high percentage of compensation in case of disaster.

The society has different tariffs varying with the risks. We give the rates in a certain number of cases :

#### Pines.

Age of Trees	Value per hectare	Premium Rate
41 years and over. . . . .	1,001 to 2,000 fr.	0.087 %
36 to 40 years . . . . .	801 to 1,000 „	0.27 „
26 to 35 „ . . . . .	601 to 800 „	0.32 „
16 to 25 „ . . . . .	351 to 600 „	0.575 „
11 to 15 „ . . . . .	251 to 350 „	1.40 „
6 to 10 „ . . . . .	151 to 250 „	2.55 „

Special rates for trees from 1 to 15 years old.

*Oaks and Other Species.*

Age of trees	Value of hectare	Premium Rate
<i>In Seedplots.</i>		
1 to 9 years . . . .	500 frs.	.75 %
10 » 20 » . . . .	1,500 »	.35 %
21 and over . . . .	2,000 »	.175 %
<i>In Copse Wood.</i>		
1 to 9 years. . . .	500 frs.	.35 %
10 » 20 » . . . .	1,500 »	.17 %
21 and over . . . .	2,000 »	.087 %

forests cut down and outside of forests: 10 and 5 per 1,000 per year.

The institution made sufficiently satisfactory progress for the first inventory, taken on December 31st., 1910, to show 5,545 hectares representing a capital of 8 millions.

There was only a balance of 395 francs to be paid off.

It seems that the development of the idea need only be left to time.



## Part III: Credit

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### AUSTRIA.

#### SITUATIONS IN THE BURDENS ON ORDINARY RURAL LANDED ESTATE IN AUSTRIA.

By JOSEF RITTER VON HATTINGBERG, *Member of the Imperial  
and Royal Council of State.*

At the request of Prof. Dr. Albert Braf, Minister of Agriculture, to  
n Austrian agriculture is so deeply indebted, statistical diagrams  
ing the fluctuations in the burdens on ordinary rural landed estate  
laid before the Austrian Board of Agriculture, when the latter was  
idering the subject of dismortgaging. Among these diagrams one  
r the whole Empire and covers the period from 1868 to 1908. There  
also others showing the share of each region of Austria in the total  
, beginning with the year 1880. The curves of these diagrams are  
mely significant for all interested in agricultural politics. They  
de us clearly to recognise, in accordance with the legal titles of the  
ens, and, the greatly varying economic conditions of the different  
ms, to what extent Austrian agriculture is affected by capitalistic  
ements and what hindrances these encounter through the geography,  
tions and economic habits of the nation.

\* \* \*

Before entering upon the strict examination of each of our diagrams,  
must give some explanation, as to what degree we are authorized to  
from the figures by which the Central Austrian Statistical Commis-  
expresses the burdens on landed estate, and on which the curves  
or diagrams are based, a conclusion with regard to the burdens the  
nian farmers are now really subject to.



In accordance with orders of the Ministry of Justice in 1867 and the officers entrusted with the keeping of the public registers, the register of estates of the nobility, municipal registers, cadastre, and registers of mortgages on mines, have to prepare statistics, beginning with the transactions registered in the cadastre, that is to say of the changes occurring during the year, in the real estate property and the charges upon it. At first these general statistics were limited to the provinces where the organization of the cadastre made the provision of information of this character possible, namely, Lower Austria, Upper Austria, Salzburg, Styria, Carinthia, Carniola, Bohemia, Moravia and Silesia. General reports were also prepared for other provinces, but as the data in these cases were not of the same character as those furnished in the registers in which the cadastre was organized, they were treated separately. When the cadastre was organized in turn in the Tyrol, Vorarlberg, the Littoral, Galicia and Bukovina, the data supplied by the cadastral offices of these provinces were utilised for comparison with other data.

In 1896, the system that it had been necessary to apply up to the year of a division of the data in two categories, was abandoned. Hence where the cadastre still had to be re-organized, was alone excluded in the statistical reports. The statistical returns have always corresponded with a division of the public registers into four classes, as follows: 1st. Noble lands and fiefs; 2nd. Communal lands; 3rd. Mines; 4th. Other landed property.

The landed property of the fourth class, with which we shall deal in this article, includes all land not falling under any of the first three heads. This fourth class does not only include peasant holdings, but also dwelling houses and workshops in the small towns, manufacturing sanatoriums, and villas in the country as well as the real estate of other groups not included within the area of a town.

To establish a certain uniformity, an order of the Ministry of Justice of December 17th., 1894 decreed that from January 1st., 1896, groups of houses, chiefly or exclusively urban in character, should no longer be included in the reports on ordinary rural landed property but those on urban landed estate. However, this did not allow of an exact idea of agricultural landed property, strictly so called being formed. Figures showing the indebtedness of landed property are obtained from the total of the burdens upon it registered in the cadastre. The result of this will be that all or part of the charges which have been altogether or in part paid off without having been formally cancelled, will be included.

It is chiefly the loans repayable in instalments, the number of which increases from year to year, that make the total burdens less than they appear in the statistical returns.

The statistics can not be easily returned without taking into account the numerous credits secured on mortgage, such as bank credits and delays allowed for the payment of the land tax, or at least taking them partly into account. Besides, in spite of the instructions, a mortgage

tered on several pages of the same land register under the various names in the book. Charges are thus counted several times. This is what is meant by the expression *Simultan hypothecken*. For such land-owners, the data supplied by the Imperial Statistical Office do not correspond with the reality; the figures it gives are too high.

Besides, the amount of the mortgage burdens on the class of holdings which we are dealing does not correspond with the general total of the charges on these holdings, for the burdens to which they are made subject by the contract have not been included. These details are in fact so small that they cannot be taken into account in the returns.

But what is more important, the true value of each farm, the land and the buildings, is also unknown to us. We cannot, consequently, compare it with the charges registered in the land registers. This is especially the case in good economic years when both the mortgage charges and the value of the holdings increase.

There is another fact to be considered. The rural landholder is more able than any one else to resist when unfavourable conditions re-

He becomes really bound to the soil. He will go without necessities; he will rather suffer hunger than leave his home. Frequently the consequences of a crisis can only be seen years later, and the statistics of the charges on landed estate can give no evidence of it, for the immediate consequences are that the rural population is worse fed than usual, and even insufficiently fed.

These are the defects of the statistics of the burdens on agriculture. In the Grand Duchies of Baden and Hesse enquiries were also undertaken in 1883 and 1885, with the object of discovering in this way the conditions of life of the farming classes. Great care was bestowed on this enquiry, and very significant facts were brought to light, but the resulting statistics did not altogether escape criticism. There were too many statements of opinion; there were no statistics for the whole country, no demonstration of truly mathematical and logical character.

Only an enquiry, made as far as possible by the same persons, could reduce this subjective character to a minimum. A return dealing at once with the whole area of an Empire cannot satisfy these requirements.

The value of statistical returns, disputed by so many, is made fully apparent, especially when they are founded like the Austrian returns, on very numerous facts.

Therefore we must never lose sight of the significant facts they may contain.

We have already shown above that, in the class with which we are dealing, there figure at the same time various holdings, some of urban and some of rural character. Amongst those not of agricultural character we find chiefly houses in small towns and market places which are used as farms. The houses in our villages and hamlets belong for the most part to the category of farms. Now, it must first of all be observed that there are peasants living in many of our provincial towns and that again it is no rare thing to find persons engaged in industry

and inhabiting such towns devoting themselves in a subordinate way to agricultural work.

The following facts will show more clearly how far the figures relating to the burdens on the class of holdings we are considering represent the indebtedness of the farms.

(1) The census of farms, held on June 3rd., 1902, shows there were in Austria at that date 2,856,349 farms, whilst the number of industrial undertakings was 1,408,855. In 620,368 cases these were farms and industries in connection with them. The total farms would therefore be 3,476,717.

(2) Considering the farms according to provinces we see that agriculture is left behind by industry only in the district of Trieste, which is almost entirely urban, in Lower Austria, which is influenced by the capital of the Empire, and in Vorarlberg, famous for its very flourishing domestic industry. In Dalmatia, Bukowina, Istria and Galicia, there were more than four times as many factories; in Carinthia, the district Goritz-Gradisca, and Styria, they were almost three times as many. In the Tyrol, Moravia and Carinthia, the number of factories was almost half that of the farms; in Upper Austria, Silesia, the province of Salzburg and in Bohemia, it was more than half. We may then quite confidently accept the fact that it is neither the charges on mortgages in the large towns, nor the mortgage debt on factories that has the special importance to the figures furnished with regard to mortgage indebtedness of the class of holdings with which we are dealing. The mortgages on peasant holdings are far more important for the purpose. This conclusion appears more inevitable as we see the same phenomena produced both in the industrial and agricultural regions. There are in fact the same fluctuations in indebtedness in provinces where there is a large supply of factories, as in Bohemia, Moravia and Silesia, and in the regions which have no large factories, nor urban quarters, nor construction, nor increase of town suburbs, as is the case in the total, Galicia and Bukowina.

In passing to an examination of the curves of the general debt for the Empire and of those for each region in particular, it is well to resume the history of the question where we left it above. The statistical returns begin with the year when the last impediment to the liberty of the peasants were removed.

In 1868, the limits imposed on peasant succession were suppressed, as also the charges on land registered in the cadastre as peasant holdings (*Bestiftungszwang*). In 1848 the free right of giving their holdings security for debt had been already accorded to the peasants.

Between 1848 and 1868 the peasants' farms were passing from their position of dependence to the new position of free property, while at the same date the price of agricultural produce was rising. It is precisely at this period we find the direct relations between producer and consumer gradually disappearing, artisans coming to play the part of dealers, the latter became also producers. Next manufactures and products

makings developed progressively; up to that moment production only responded to orders from private individuals; to-day the products work for the wholesale market. At the same time, the fundamental importance of agricultural production became more widely understood. Albrecht Thaer had energetically maintained that agriculture was the industry the object of which is not to obtain from the soil the greatest possible *production*, but the largest possible *profit*. Justus Liebig had, teaching that natural production must be increased to the extent by the entire restitution to the soil of the nutritive elements taken from it in previous harvests. Then political theories were needed, according to which agriculture was regarded as the very basis of the State and agricultural industry as a public service; it should be carried on with the object of obtaining the greatest personal profit, while realising the largest possible production for the State.

Whilst these new economic theories exerted a lasting influence on the development of agricultural industry, a difficult period was in store for the Austrian farmer. Capitalistic interest began to grow stronger and stronger to dominate a larger part of the Empire. The motive force was not the knowledge and the capacity of individuals, but an impersonal material force. This provided new means of communication, new conditions of the market and led to transatlantic competition. It made the farmer to accustom himself to reckon with the variations of production and with the uncertain profit from sales. It made agriculture an industry dependent upon speculation.

Since profit was the general aim, the farmer also sought to profit by it. It seemed that the first conditions for this were intensive cultivation and larger holdings. When the means for these were wanting, very often was the case, loans were contracted. The rate of interest was increased, and soon also did the price of the land.

Our statistical returns began in the years when agriculture was making strides. From that date their groups of figures correspond with the economic progress of our farmers. They show us the effects of the crisis of 1873, as also they show us the economic movement which expressed itself later in the increasing importance of the new money economy for agriculture.

The rapid economic change in 1873 began with a great fall in price of agricultural produce. In consequence of this, many farmers failed and their farms were sold by auction. There was general consternation. It was soon seen that the peasants were threatened with ruin. People began to doubt of the benefits of the liberal laws. They deplored the folly of abolishing the ancient legal system which had entered into the habits of the people, without instituting a new system of agricultural law.

Following the teachings of Rodbertus who, already about 1840, in Germany, had strongly protested against the breaking up of the existing economic life, the unrestricted pursuit of the reckless increase in speculation, a certain number of agricultural economists considered that the original cause of the whole evil was that the

peasants were burdened with debt. The farms were more and more heavily burdened, for they had to bear the charges due to the subdivision of land in cases of inheritance, and to pay the amounts of the purchase price still due.

This was a kind of economic ruin. The soil, as the object of frequent transactions, became just an article of merchandise like any other. Large capitalists and the owners of large estates bought up the medium-sized farms. These continual changes imposed excessive burdens absorbing any profits the owners might hope for.

Decrees were invoked for the regulation of the inheritance of landed property (*Anerbenrecht* - right of undivided succession), the restriction of the trade in holdings (*Höferecht* - registration of holdings in special registers), the limitation of the extent to which land may be encumbered and of the trade in holdings, (*Rentengüter*), prohibition of speculation in peasants' farms (*Bauernschutz*, peasants' protection).

The *Anerbenrecht* and *Höferecht* were approved in their general outline in an Imperial law (*Reichsrahmengesetz*). But only the Land of Tyrol and Carinthia adopted these provisions of agricultural law in accordance with the Imperial Law. The other Landtags refused in any way to restrict the freedom of action of the peasants in their districts. The bill on *Rentengüter* did not come up for discussion in Parliament. Only the Landtags of Upper Austria and Salzburg passed laws against speculation in peasants' farms.

Finally, in the last ten years, an attempt has been made to limit the degree to which the land may be encumbered, so as to prevent peasants incurring debts to an immoderate degree. The peasant was not thought competent without assistance to learn the difficulties of regulating his expenditure in accordance with his revenue, so we should gently constrain him to it. The idea of a new legal system of credit in accordance with these tendencies was, however, rejected by a large number of agricultural corporations as too serious a limitation of economic freedom of the peasants and a dangerous check to their economic energy. So, for the moment, no Government bill was drafted. The Government proposed to itself to overcome this continually increasing indebtedness of the farmers, by the grant of cheap credit, using savings realised by lowering the rate of interest for the systematic extinction of this indebtedness (compulsory extinction of mortgage loans).

Further, we must add the decisive encouragements given to agricultural co-operation, for the organisation of personal credit, the co-operative supply of farm requisites, as well as the co-operative sale of agricultural produce, which they are more and more successfully realising.

The measures for the improvement of the soil and the farm, for the stripping and regulation of servitudes, the provisions relating to co-operative farms (*Almenden*), laws for the protection of the Alpine districts, the progress of Alpine economy, the extinction or the determination of servitudes on meadows and pasture lands, the efforts to prevent excessive subdivision of farms, the measures for the regulation of

your supply and for sickness, accident, old age and disablement insurance, represent the most recent Government provisions in behalf of agriculture.

Still, famous specialists in agricultural economy continue to assert, in this connection, that the principal reason for the great indebtedness of the farmers is the necessary consequence of their incurring debts when purchasing or inheriting their farms, and that it is only by legislative measures limiting their liberty of contracting debts, that they can be protected against themselves and against modern capitalism.

If we wish to draw a conclusion with regard to the economic situation of our agricultural population from the curves expressing the indebtedness of ordinary rural landed property, we shall first have to consider some other statistics.

It is desirable to consider the census of farms in 1902.

(1) The purely agricultural holdings, in number 2,856,349, were divided, according to area, as follows :

146,921	or 43.6 %	very small holdings of less than 2 hectares;
166,290	" 28.2 %	small peasants' holdings of from 2 to 5 hect.
136,171	" 22.3 %	medium sized peasants' holdings of from 5 to 20 hect.
148,529	" 5.2 %	large peasants' holdings of from 20 to 100 hect.
18,437	" .7 %	large holdings of more than 100 ha.

In these figures no account has been taken of the 620,360 mixed holdings, used for both industrial and agricultural work.

(2) In an area of 300,008 sq. km. and a population of 26,572,387 in 1902, there were 9.5 farms per sq. km., and 10.7 % farmers.

(3) 9,070,682 persons were employed on the 2,856,349 purely agricultural holdings. There were 4,049,320 engaged in the 1,408,855 purely industrial businesses.

(4) Of the 2,856,349 farms, only 140,870 are worked exclusively by tenant farmers and only 18,102, belonging to owners who do not themselves work them, are farmed in return for a share in the profits (a sort of *métairie*). By far the most of the other farms are worked by the owners themselves.

A smaller proportion consists of farms composed at once of land belonging to the farmer and land hired by him. The proprietors themselves farm 71.9 % ; 22.1 % are worked on the mixed system of direct hiring and lease ; and 5.3 % are exclusively worked by tenant farmers.

(5) There were domestic animals on 2,544,792 farms ; that is 89.1 %.

There were 1,540,931 horses, 65,326 asses, 9,025,257 oxen, 826,756 pigs, 2,802,346 sheep, 4,365,095 pigs, or altogether 18,625,711 domestic animals. Of the purely agricultural holdings, excluding those which are merely market gardens, vineyards or forests, there were 88 % on which there were domestic animals, 23.1 % on which there were horses, 73 % on which there were oxen, 49.3 % on which there were pigs.

Classes of Holdings	Average Number of Domestic Animals per Farm				
	Horses	Oxen	Goats	Sheep	Pigs
Average . . . . .	2.2	4.1	2.1	9.8	2.8
2 hectares and less . . . . .	1.4	1.7	1.8	7.1	1.7
Between 2 and 5 hectares . . . . .	1.6	2.8	2.4	8.1	2.1
"    5    "    20    "    . . . . .	2.0	5.6	2.2	9.2	3.5
"    20    "    100    "    . . . . .	2.8	13.2	2.7	12.9	6.3
Above 100 hectares . . . . .	15.8	56.2	9.1	72.4	13.7

(6) Machines were only used on 947,111 of the 2,856,349 farms that is to say:

on 139,548 out of 1,246,922 farms of less than 2 hectares.

„ 796,811 „ „ 1,590,990 farms of between 2 and 100 hectares.

„ 10,752 „ „ 18,437 farms of more than 100 hectares.

(7) Of the 2,856,349 farms, 2,224,937 were farms worked solely by the family. 547,107 were worked by the owners alone, 1,677,830 the owners with the help of the members of their family, whilst 631, farms were worked by outsiders, servants, day labourers and seasonal workers. Those worked exclusively by the family formed 90 % of the small farms, 83.3 % of the small peasants' farms, 57.1 % of the medium peasants' farms, and 2.3 % of the large peasants' farms.

(8) In 991,371 cases, the farm proprietors also themselves do part of the labour.

It is also important to remember that:

(9) The very ancient legal institution of maintenance still exists in a large part of the Empire. This is an arrangement by virtue of which the peasants' holdings pass from generation to generation not by inheritance, but by means of special arrangements in virtue of which relations receive lodging and board or an equivalent in money and kind.

In 1908 there were 721,611 cases of this system in existence in Austria. In the Sudetic districts this was the case in 798 out of 1,000 farms in 245.7‰ in the Alpine Provinces, exclusive of Tyrol and Vorarlberg in 67.7‰ in the Carpathian Provinces, and in 47.2‰ in the Ka. Further:

(10) In Upper Austria, Lower Austria, Salzburg, Styria, and certain parts of Carniola, Littoral, Bohemia and Moravia, the custom still continues, in spite of the abolition of the laws relative to the inheritance of peasants, of regulating the inheritance of a peasant holding.

marriage contract or community of property so that the shares of the heirs may not be too large.

We may now draw the following conclusions:

In spite of the very great development of industry in Austria, it remains an agricultural country. Out of every ten men, one is a farmer, a third of the population is engaged in agriculture. There are people bound to the soil, for only 5.3 % of the total number of farms are worked by tenant farmers.

Of the farms from which the population derives its means of subsistence, 71.8 %, or the majority, are small. Again we find this population almost exclusively cultivating farms under family management, that is in 2,224,937 instances in 2,856,349; most often they remain attached to the ancient economic family traditions, only slowly giving way before the invasion of the modern spirit. What is still prevailing are contracts of maintenance out of the produce of the farm, marriage contracts and contracts of inheritance with regulation of succession. Agricultural Machinery is only in use on a third of the farms; in the case of very small farms we only find machines used on 58 out of 1,246,922. The money yield of the farms is very small. 1/3 of the farms are small, if not very small. In 991,371 cases out of 2,856,349, the farmer has to undertake other remunerative work in addition. This population therefore must suffer at once whenever a crisis occurs for the worse in the economic conditions, and has to exert great effort to maintain itself. If we further consider the influence of the economic development which has raised our agriculture from its position of political and economic dependence to share in the largeness of the present economic life, the meaning of the curves in our diagrams which show the situation of agricultural indebtedness will become clear, without need of long explanations.

What first of all attracts our attention in the lines in the general diagram for the Empire is the large increase in the total of new burdens: this is evidently due to credit operations, and the cause must be looked for chiefly in the loan contracts.

Along with this, we see that, during the whole period in question, the debts consequent upon inheritance have remained at a low level, those incurred for purchase of the holdings have but slightly increased during the whole period considered in the report, except in the year 1906. We observe with pleasure, though not unmixed, how the curve indicating extinction of debt, makes constant though unsuccessful effort, but that indicating the indebtedness due from the total credits granted. After the difficulties of the period between 1893 and 1897 had been overcome, it unites with the curve indicating indebtedness through loans; for a certain number of years it even passes this, without reaching that of the total indebtedness.

The diagram also shows lines indicating the sales on account of bankruptcy and repayment and extinction of debt in consequence of the intervention of bids at these sales, showing a tendency to decrease.



Let us now consider the groups of figures on which the diagrams based. We find the following figures for new annual charges:

Years	New Charges	Diamort- g a g e m e n t	Increase of Indebtedness
	millions of crowns	millions of crowns	millions of crowns
1871 . . . . .	136	114	22
1874 . . . . .	213	124	84
1881 . . . . .	173	150	23
1894 . . . . .	222	140	82
1898 . . . . .	408	247	161
1905 . . . . .	538	339	199
1906 . . . . .	558	346	212
1907 . . . . .	570	348	222
1908 . . . . .	606	345	261

From an examination of these figures we may see the periods in which the need for credit increased. It has manifested itself suddenly. In 1874 there was a net increase of 84 million crowns in the new charges. After ten years' interval, we have to note an increase of 82 millions, after 1898 when the indebtedness increased by 161 million crowns; find new increases of 199, 212, 222 and 261 million crowns.

In the period of 37 years the debt on ordinary agricultural holdings has increased by about 3,394 million crowns.

With regard to the causes for the burdens on landed property find that in 1871, 87.6 % of the total charges and in 1908, 96.3 % originated in credit operations.

In the latter year, 59 % of these credits consisted in loans, 12.1 % in balance on purchase price of holdings, and 12.1 % in debts contracted on other grounds.

In 1908 6.8 % of the general indebtedness of this group of holdings originated in the conditions for division in cases of inheritance. The corresponding proportion in 1871 was 12.1 %. Our Imperial Statistical Office attributed this decrease in the proportion of the indebtedness thus arising to the fact that the returns of those provinces are included in which those on whom peasant holdings devolve by inheritance are not subject to the laws on integral succession (Bukowina, Lemberg, and a large part of West and East Galicia). There was a decrease in the amount of registered mortgages of 8.2 % in 1871 and 5.4 % in 1908, and a corresponding increase in forced sales.

For the general total of the various amounts and the interest on mortgage, we must content ourselves with ordinary statistical data for all classes of holdings, but they may be considered as indicating special conditions of the group of holdings we are dealing with.

Between 1896 and 1900 an average of 81.6 % of all the new mortgages were for amounts of not more than 2,000 crowns. Between 1900 and 1905 the corresponding average was 78.6 %; then in 1906, 77.7 %, in 1907, 75.7 %, and in 1908, 75.6 %.

In the years preceding 1896,  $\frac{4}{5}$ ths. of the total of new charges in all classes of holdings were less than 3,000 crowns. Of these,  $\frac{1}{3}$ rd. for amounts of 200 crowns and under.

In recent years this proportion shows an absolute decrease from year to year in the provinces of the Alps, and a relative decrease in many other regions. An increase has only been observed in Bukowina and Galicia.

The large proportion of loans for small amounts in the annual indebtedness is quite remarkable. The cause of these small loans may be sought either in the fact that there was no sufficient security or that the demand for credits was too large or again that the farmers were afraid to borrow. Besides the decrease in loans for very small amounts may also be connected with the increase of Raiffeisen loan banks.

And, if this supposition is correct, we shall have to register the fact on which to congratulate ourselves that from year to year recourse has become less and less to mortgage loans to meet the current requirements of the farms.

In the following table we shall see the variations in the rate of interest on mortgages :

*Rates of Interest below 5 %.*

Years	Number of Loans		Amount of Mortgage Loans	
	Total	Percentage	Total	Percentage
1879 . . . . .	21,247	17.7	53,994,526	20.8
1885 . . . . .	41,300	34.7	173,106,550	51.0
1900 . . . . .	68,939	55.1	298,390,472	71.8
1905 . . . . .	87,291	66.5	391,460,600	74.7
1910 . . . . .	81,396	62.9	361,597,781	71.1
1915 . . . . .	106,181	65.9	648,758,611	79.2

*Rates of Interest above 5 %.*

1879 . . . . .	98,857	82.3	206,040,244	79.2
1885 . . . . .	77,857	65.3	166,420,682	49.0
1900 . . . . .	56,188	44.9	177,183,500	28.2
1905 . . . . .	43,934	33.5	132,529,708	25.2
1910 . . . . .	47,978	37.1	146,741,026	28.2
1915 . . . . .	57,110	35.0	170,922,397	20.8

The table of the total indebtedness for the whole Empire is characterised by the increase of the debt due to the continually increasing use of credit, and by the fact that, in spite of their regularity, repayments form only an insignificant figure, and again by the slow decrease in small mortgage loans, inconsistent with good economy, the constant improvement in rates of interest and finally the comparatively favourable results from the forced sales.

Let us see whether the diagrams for the various provinces, furnish confirmation or correction of this general statement.

That for Upper Austria strikes us first of all by the smoothness of the curves.

The curve for the total amount of new charges only rises from 22 millions to 26 millions of crowns. In the periods 1881-1890 and 1895-1905, we even see the line of indebtedness falls in a marked degree. At first the curve for the repayment of debt passes far beyond that of indebtedness originating with loans, but in the last six years it no longer follows the ascending curve for the total new charges. But it is not surpassed by the curve for indebtedness originating with loans. The curve of annual indebtedness for the purchase of land is of small importance and the same is true for that originating with amounts to be paid to other heirs. The forced sales and repayments or extinction of debt through the insufficient results of sales show little variation.

But it cannot be ignored, that it is the indebtedness originating with loans that chiefly influences the general fluctuations of the burdens on land.

Now Upper Austria is a province in which the position of the payments is consolidated.

Large industry occupies a smaller proportion of the territory than in the other provinces. In a productive area of 1,109,874 hectares, there are 81,308 farms. Of these 31.9 % are less than 2 hectares in area, 17.8 % are between 2 and 5 hectares. 50 % of the farms cultivate farms of between 5 and 100 hectares. 31.2 % of them are medium sized holdings. 18.8 % are large farmers.

Except in the South among the mountain chains and slopes, the country offers fertile soil for cultivation. The means of communication are good and yet the indebtedness of rural land increased by 123 million crowns between 1871 and 1908, owing to loans contracted.

Let us compare the diagram for Upper Austria with those for Lower Austria, Bohemia, Moravia and Silesia.

In all these provinces the curves of indebtedness present the same general appearance. We see the same irresistible upward movement in the total of new charges, a rise due to debts for loans contracted. We see also that the curves of repayments at the start go far beyond that of the debts for loans.

The annual debt, for the balance of the purchase price of holdings and for the shares of inheritance due to joint heirs, is comparatively small. These resemblances, do not prevent our being able to point

in differences. First of all the lines of indebtedness rise more rapidly over Austria, Bohemia and Silesia. They rise in uneven waves. In via they rise in very irregular waves. The curves of repayment cut out the lines of debt for loans. The curves for the sales rise rapidly in Bohemia and Moravia, to fall again afterwards also rapidly. Generally speaking, in spite of this fall, in Bohemia, Moravia and Silesia are irregular. In the years which witnessed the economic reestablishment of Upper Austria all four of these provinces showed a large rise in their indebtedness.

Lower Austria, Bohemia, Moravia and Silesia are provinces of marked industrial progress. It has not been determined to what degree the need for industrial business has contributed to the irregular course of the curves of indebtedness. The sudden rises of the latter curves in these provinces might be due to this cause, the rather as they manifest themselves at other dates than in the agricultural province of Upper Austria.

But the industrial progress of these provinces has also evidently needed the progress of farming. As the industrial population shaves and more need of agricultural produce, farming necessarily soon becomes more intensive. But the farms' own resources were not sufficient for the purpose, nor were the farmers in a position to support a change in economic conditions. In order to modify their methods of farming, they were therefore compelled more and more to have recourse to credit. We shall see from the following table how the holdings are divided in these provinces as compared with Upper Austria.

Provinces	Productive Area	Number of Farms	Less than 2 hectares	Between 2 and 5 hectares	Between 5 and 20 hectares	Between 20 and 100 hectares	Between 100 and 1000 hectares	Increase of Indebtedness since 1871
	Hectares		%	%	%	%	%	Millions of Crowns
Upper Austria	1,910,719	155,725	38.9	17.7	31.0	11.8	42.9	427
Bohemia	5,019,313	568,389	45.6	24.9	22.7	6.3	29.0	1,056
Moravia	2,151,901	290,678	51.0	22.6	21.8	4.3	26.8	316
Silesia	498,872	58,759	49.5	23.8	21.3	5.0	26.3	133

Let us take the diagram for Styria, which will allow of our making a comparison. The course of each curve is there more decided than in the four above provinces. It introduces no essential change in the general table. One fact alone appears worthy of remark. In 1882 and 1883, as well as in 1889, the line for repayments even passed that of indebtedness originating with various credit operations; since 1890 it

has remained below these collective lines, but always keeps above the curve for loans contracted.

Styria is for us quite especially interesting, for, in the report of the provincial statistical office on rural holdings and the state of the indebtedness in 27 communes, we find the data provided by an enquiry excellently carried out, giving us a very interesting view of the economic conditions of this Alpine province with mountain valleys really quite of the world.

This is what we find: the indebtedness originating in loans, which in the communes included in the report, rose on an average to 68.24 % of all the registered debts, presents very marked differences in the various communes. These various differences in the percentage of indebtedness originating in loans range from 15.94 % in the commune of S. Leonhard to 86.45 % in that of S. Leonhard.

The Provincial Statistical Office remarks as follows:

"We may trace the origin of these considerable differences, partly to local use, partly to the fact that financial economy has manifested itself to a greater extent in town communes and market centres or again in the most important communes in the neighbourhood of the chief towns of districts. This opinion is confirmed by the fact that, with but a few exceptions, we find, together with the decrease in the percentage of loans granted, an increase in the percentage of debts originating in succession among joint heirs, and in the balance of the purchase price of farm property. In this province where marriage and succession contracts are usual, and contracts of maintenance habitual, the share of the debt contracted in connection with inheritance amounts on an average to 26.8 %. Some of the figures on which this average is based were: 15.3 %, 17.44 %, 59.98 %, 66.95 % and even 100 %. Formal rules cannot then be established with regard to the territory with which the report deals. The debt incurred for working capital was on an average 13 % of the total. However, in proportion as the various communes became distinguished by intensive farming, the percentages vary from 1.69 %, and 2.45 %, to 22.4 %, 22.47 %, 27.8 %, 37.25 % and up to 44.27 %. The proportion of the total debt owing to credit establishments, was, on an average, 56.86 %, whilst that owing to private capitalists amounted to 41.67 %. The proportion owed to savings banks, the most important sources of credit to which recourse is had, amounted to 4.9 %, 6.86 %, and even to 26.5 % and 80.9 %, while the figures for private credits amounted to 74.9 %, 79.7 %, and 91.5 %. It is significant that the provincial statistical office attributes these facts to the marked agricultural character of the land. It considers private credit as a very important factor in rural mortgage credit. With it accounts for less than 50 % of the total debt in 15 communes, and for 50 to 75 % in 12 communes. It may be supposed that generally private credit is agricultural credit, from relatives, neighbours and friends, whilst it is only possible to distinguish a lesser number of money lenders strictly so called, among the creditors."

the economic and social influence of the former is not to be despised. Credit establishments are to a large extent outside the peasant rural land would be dependent for credit on quite other professional classes. The credit granted by relatives and friends consists on the one hand of capital and interest benefiting those who are themselves peasants and invest it in agriculture. It is, besides, probable that, in the case of the majority of these private debts, there is no absolute obligation of repayment or payment of interest.

We shall find also in our other Alpine lands and in all our provinces where agriculture is predominant, the same conditions as are shown in the case of Styria in the report of the enquiry. The old natural system of farming is slowly passing away; our peasants are gradually becoming their farming more and more intensive, and for all this more and more capital is required. Relatives, neighbours and friends are often unable to supply the money, for they are in need of it themselves. It is necessary then to seek it from outside sources. Thus, peasants render themselves at first dependent on the other classes of the population, and finally on the international market, where they are exposed to all the fluctuations of speculation. With the change of the system of farming, another important change takes place in the economic conditions. The community of interests disappears gradually, to reappear much later, through the necessity itself of the age, in the form of co-operative societies for credit and production.

The following table enables us to form an idea of the conditions and indebtedness of the farms in the provinces under consideration.

PROVINCES	Productive area — hectares	Number of Farms	Farms					Increase of Indebtedness — Between 1871 and 1908 — Millions of crowns
			Of less than 2 hectares	Between 2 and 5 hectares	Between 5 and 50 hectares	Between 50 and 100 hectares	Between 100 and 500 hectares	
			%	%	%	%	%	
Carinthia	2,088,693	150,426	33.3	22.4	31.8	11.4	43.2	192
Styria	608,160	15,825	23.2	14.3	35.9	22.3	58.2	57
Salzburg	938,286	33,294	22.4	16.8	32.7	25.0	57.7	61
Tyrol	951,022	57,477	31.6	19.4	39.1	9.5	48.6	54
South Tyrol	2,158,315	127,509	52.1	21.6	18.4	6.5	24.9	371
Vienna	228,890	18,034	42.4	26.2	25.3	4.4	29.7	50 Since 1888
Lower Austria	745,246	79,759	43.3	27.8	25.5	3.0	28.5	120 Goritz and Gradiska
Upper Austria	7576,098	1,008,341	44.0	36.4	18.0	1.0	10.0	388 Gradiska
Moravia	1,009,415	109,170	57.8	28.0	12.1	1.5	13.6	48 Istria

Thus compare with our table the diagrams of the regions for which we have been supplied. It is of small importance whether

we take Styria, Salzburg and a part of Carniola, where the use is preserved of marriage contracts and contracts of inheritance in which the portions are settled; or Tyrol and Carinthia, where to preserve the condition of peasant landed property by means of *erbrecht* (right of undivided succession) and in accordance with the law of registered holdings (*Hofverfall*); or again of the Maritime and a large part of Galicia and Bukowina, where the farmer's holdings to one principal heir in their wills, and distribute to other heirs, shares according to their degree: whether it be one of these we consider, the above comparison will only show us, that, except for slight differences, these provinces present the same conditions, from those with peasant farms of an average area to those with small or very small farms.

The curve for the debt representing the balance of the price of holdings, and that representing the shares of inheritance to the credit of joint heirs, are at a rather low level. Tyrol with its mountains and uncultivated land, and its valleys cultivated to the fullest extent, where the land is consequently dear, forms an exception. Loans predominate in all the curves of indebtedness and the ascending movements of greater irregularity in proportion as we pass to farms the economic situation of which is inferior or to farms themselves smaller. But in all the provinces there is a great readiness for the extinction of debts by forced sales having produced a loss, as shown by the lowest curves, above all in the regions with smallest farms, the Lüttoral, Galicia and Bukowina, where they are the lowest possible. In spite of this the curve for forced sales in certain provinces rises very certainly. This shows that these provinces which have little to suffer from the severity of their creditors, and that results of forced sales are frequently sufficient to pay all the debts, one after another according to their rank in the register.

But in order not to be misled by certain appearances, we must serve: In the small province of Salzburg the curves of indebtedness and repayment are subjected to some strong influence, probably the thermal Stations of Wildbad, Gastein, Bruck-Fasch and Zell, or of the same name, a summer resort. In addition, Vorarlberg, a region of domestic industry, which understands how to save under conditions far more permanent than they could be without the investment of elementary capital thus obtained.

And now from the preceding data we may draw our conclusions.

We find no confirmation in our data of the opinion that it is to seek the principal cause of the increase in the land debt of the farmer, in the fact that the balance of the purchase price of holdings and the debts due on shares of inheritance to be paid to the heirs are secured by registration in the land registers.

Doubtless there is a point we must not fail to take into consideration, namely that these two classes of debt are met by means of loans.

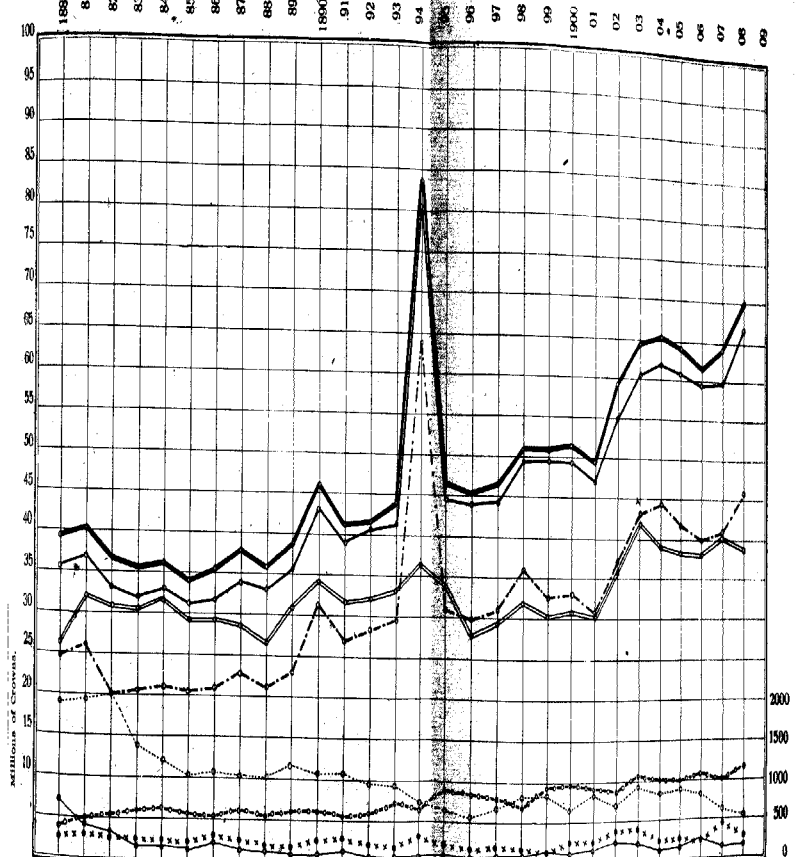






# *Fluctuations in Mortgages (Debt, Dismortgagement) and Compulsory Sales by Auction of Primary Landed Estate, between 1880 and 1908 in the Province of LOWER AUSTRIA*

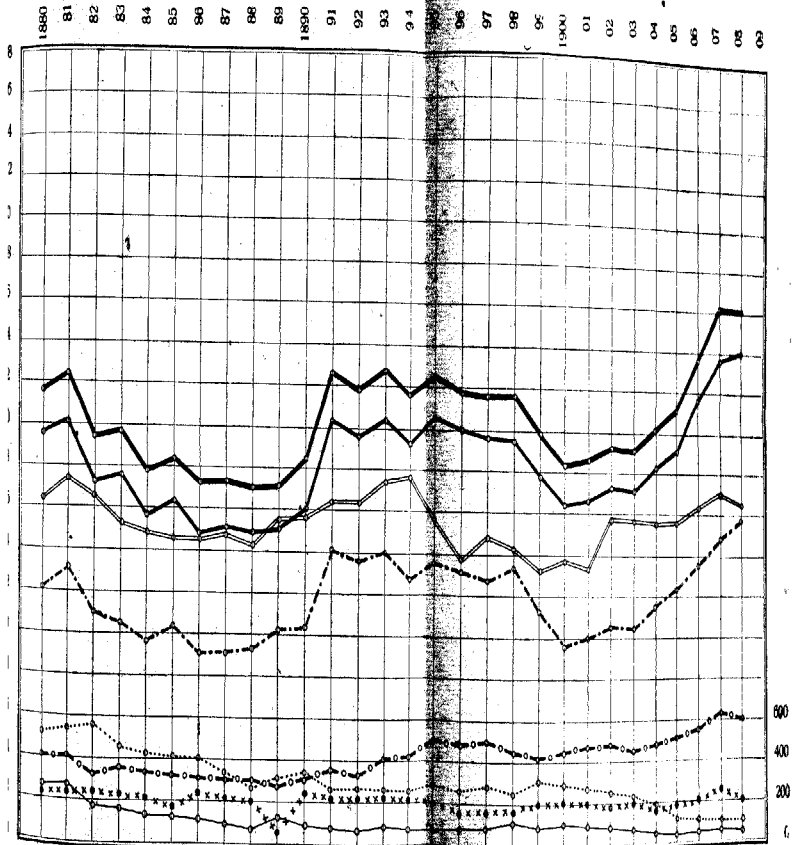
— Debt Balance due of Purchase Price of Landed Estate - Amount of Loans Contracted - Other Debts through Provisional and Judicial Mortgages.  
 - - - - Debt through Loans Contracted.  
 - - - - Balance due of Purchase Price of Landed Estate.  
 ■ Total New Charges.  
 . . . . Debt (originating in Division of Inherited Landed Estate).  
 — Number of Compulsory Auction Sales.  
 — Payment of Debt.  
 — Debts extinguished owing to delay of the Bids at the Auction Sales.



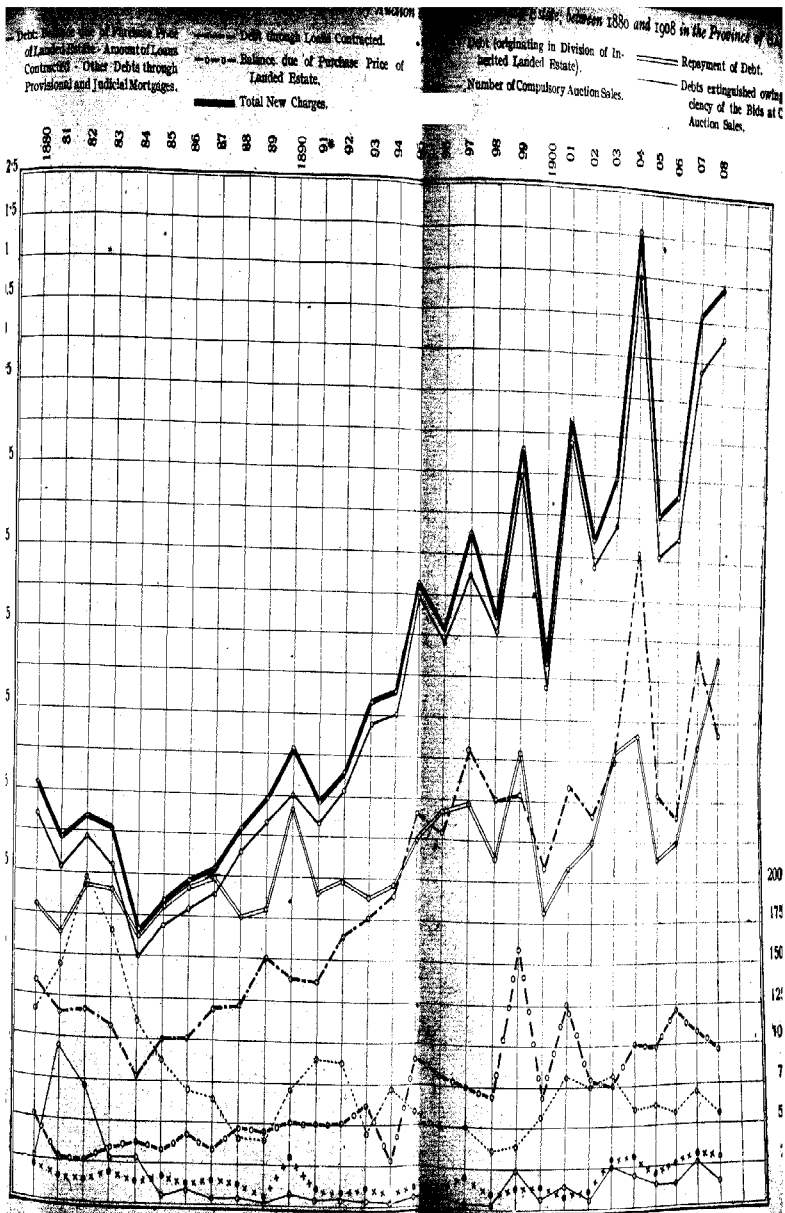


*Changes in Burdens (Debt, Dismortgagement) and Compulsory Sales by Auction of Landed Estate, between 1880 and 1908 in the Province of Upper Austria*

- Debt: Balance due of Purchase Price of Landed Estate - Amount of Loans Contracted - Other Debts through Provisional and Judicial Mortgages.      - - - - - Debt through Loans Contracted.      - - - - - Debt (originating in Division of Inherited Landed Estate).  
 - - - - - Balance due of Purchase Price of Landed Estate.      - - - - - Number of Compulsory Auction Sales.      - - - - - Repayment of Debt.  
 - - - - - Total New Charges.      - - - - - Debts extinguished owing to delivery of the Bids at Compulsory Auction Sales.









d more readily in proportion as the progress made by money economy attributes indirectly to the increase of the debt.

The Statistical Office of the Province of Styria professes itself of that opinion. But, precisely the regions of the Empire in which our farmers regulate the succession of their holdings, according to ancient usage, by contracts of marriage, inheritance and maintenance, or in conformity with the law of undivided succession, so that the joint heirs only receive a small part of their inheritance and that the one who receives the holding has a suitable position, these regions, we repeat, show, as the Imperial Statistical Office says, that the debt on the shares to be paid to joint heirs is relatively higher than in the parts of the Empire where there is freedom of testamentary bequest.

If, further, loans contracted to pay the shares due to joint heirs and the balance of the purchase price of holdings had had so decisive an influence, the curves expressing this part of the indebtedness would show clearly. They would show various marked falls. We cannot therefore seek in these causes of debt the chief reason of the rapid increase of the burdens on the land of our farmers; there is another reason for this at we find manifesting itself clearly, we mean the more and more appreciable shortage of capital, due to the increasingly intensive system of farming, and entailing increased need of credit.

Certainly, we must congratulate ourselves that the soil of the monarchy has not been exploited by a small number of large farmers, but by a large number of small ones. As a general rule, every farmer applies himself more when working on his own account than when engaged by others and the land feels the effect. The more intensive farming is resorted to, the more important is the fact that of 2,856,349 independent farmers, 1,246,922 have only very small farms of less than 2 hectares and 806,290 others have at most only 5 hectares to work. These 2,053,212 small and very small farms, worked on a primitive system, would be unable to meet the requirements of intensive farming, either because our farmers are deficient in economic knowledge or, and chiefly, because they are without the necessary means.

In order to maintain themselves on their land, they have to produce more, but they lack that which, with their working capital, alone could make such increase of production possible. They must have recourse to loans. But the supply must be abundant, for, otherwise, if they are too small, generally it is money thrown away without appreciable result.

We must therefore consider the prospect before us. The debt is secured on second and even third mortgage and the rate of interest of each new loan increases: the farmer becomes the slave of the interest he has to pay, the profits of the land enrich other professions, other districts and provinces, and finally the debt for loans increases continually.

The economic situation of our 636,171 farmers on medium sized farms is also not very prosperous.



The course of the repayment curves shows us what efforts our farmers make to pay their debts. With just right, complaints are made with more and more frequency, of the decrease in the funds of our rural population.

It is not therefore a case of the difficult art of adapting oneself to circumstances nor of the introduction of legal provisions for the maintenance of property for the heirs, but of measures to be taken to consolidate the position of the holder. For it is on his prosperity that that of his children and that of the young generation of Austrians depends. Most of the debts entered in the land registers are certainly contrary to the interests of agriculture.

This is not because the shares of joint heirs and the balance of the purchase price that still remains to be paid weigh excessively and more and more heavily on the land; but, because the debts contracted to cover the working expenses, which should be incurred under the form of personal loans speedily repaid out of the profits of the farm, appear as burdens on the land, and remain encumbering it even after the economic period for which they were required and which should have made provision for their discharge has long passed. Another reason is that the loans on land serving for the purchase of the land and the improvement of the soil, that is, the real debt on the farm, generally encumber the land without any possibility of their being paid off in small instalments and consequently without it being possible to reduce the amount. A final reason is that, very often, a first loan, at a fair rate of interest, necessitates, first a second and then a third mortgage, by means of which the interest becomes higher and the net revenue is reduced.

A policy in conformity with the economic laws of credit might introduce a radical change. With it should be united a corresponding financial policy to keep the savings where they are made and give them new applications without letting them pass to the international market from whence they could only be recovered at a higher cost. The provincial mortgage institutes of Austria, and the Raiffeisen Banks, institutions the reputation of which has long been made, offer all that is required for the formation of that large credit organization in conformity with the requirements of the farmers. It is only a question of forming it quickly.

## CHILI.

### ORGANISATION OF LAND CREDIT AND THE BANK OF MORTGAGE CREDIT IN CHILI.

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#### § 1. THE MORTGAGE SYSTEM IN CHILI.

Land credit is so dependent on the excellence of the laws that govern real estate and the mortgage system, that we deem it opportune to point out the characteristics of these laws before we speak of the "Caja de Crédito Hipotecario", and of other mortgage banks which have arisen by virtue of the fundamental law of August 29th., 1855.

The Civil Code of Chili, promulgated, on December, 14th., 1855, instituted a system of publicity with regard to changes in property and all that relates to the constitution of mortgages. It has therefore established regulations which allow of a clear insight into the exact legal condition of any real estate, the transfers and divisions it may have undergone, and for ascertaining the encumbrances on it. The Code has in this way been favourable to the increase of Land Credit.

In Chili a distinction is made between the title to property and the manner of its acquisition; to effect the transfer of real estate, the title must be entered in the land register. Until this entry be made, though the contract of sale be complete and give rise to obligations between the contracting parties, no real right has been conferred, nor has it any force as regards a third party. This necessity of registration to establish a real right over land as against third persons entails the following consequences

(1) Every objection to alienation or burdening of real estate must be registered before producing any effect as regards third parties.

(2) Sequestration of real estate cannot be effected legally as regard third parties unless duly registered.

(3) All objections against sequestration, and other changes in the state of the property must be registered in the department inhabited by the person against whom such objections are directed, and also in the department or departments in which the property is situated.

The Civil Code requires that every mortgage be guaranteed by a principal written obligation, which, to become valid, must be entered in the register kept by the Registrar of mortgages of the department in which the real estate offered as guarantee is situated. The entry must show, besides the necessary indication of the contracting parties, the principal details of the contract, the extent of the obligation, and must describe the real estate exactly.

It is important for us to observe that under the Chilian system there are no *secret mortgages, either legal or judicial*. A mortgage can only be passed by contract, and on a definite real estate property.

In this manner any one who lends capital on landed property, can by consultation of the register kept by the mortgage registrar, make sure whether or not the property offered as guarantee be free from all encumbrance. Therefore, the mortgage institutions are calculated to inspire confidence in the money market as mortgages secured on loans do not present the same risks as secret, legal or judicial mortgages.

The mortgage affects not only the land but also everything connected with it that may be considered as real estate, and also increase in value improvements, rents and insurance.

The creditor has preference rights and in case of the debtor failing to fulfil his obligations, may sell the property by judicial alienation, and deduct from the price the amount of the mortgage.

This system of publicity, as it exists in Chili is thus maintained by means of registers kept in the Office of the "*Registro Conservatorio de Bienes Raices*."

We shall in a few words describe the mode of working of this office

The registrar must have ready for exhibition to the public a description of the limits of the department to which the Office belongs, and a list of the rural landed estate of the department paying the land tax. In a book called the "*Repertorio*" are noted in the order of their presentation, the titles to be registered with mention of the month, day and hour when the note is entered. All acts and titles as soon as they are noted in it

Repertorio are divided into three groups which correspond to the three following books of registers :

(1) *Register of Ownership*; in this are noted all transfers of the property whether made by persons still living, freely or under conditions, or at death.

(2) *Register of Mortgages and of Encumbrances*; in which entry is made of mortgages, rents, right of usufruct, use and habitation, servitudes and other real rights. There are also here noted contracts of hire, responsive or resolutive clauses, and all other rights constituted on them.

(3) *Register of Interdictions or Prohibitions of Sale*; in which are entered all impediments whether conventional, legal or judicial, that in any way restrict the right of alienation.

Besides these entries, note is taken of all cancellations, transfers of mortgage and everything else that refers to the entries made.

These books are kept by a Registrar appointed by the President of the Republic. Before taking office this Registrar must take the same oath as a notary, and give a certain security or a mortgage as a guarantee for the correct performance of the duties of his office.

## § 2. THE LAW OF 1855 AND THE "CAJA DE CRÉDITO HIPOTECARIO".

The organisation of the Mortgage Credit Bank deserves special attention, because it is a type of land credit institutions, and is planned to correspond exactly with the social and economic conditions of the period and of the country in which it arose.

If we turn in thought to the condition of Chili in 1855, we shall perceive the difficulties of the problem of land credit, the solution of which was as important in the rural economy of that country as in that of more advanced nations at the same period. But in Chili the problem could not be solved by means of the same kind of institution which had arisen in other countries. It would in fact have been absurd to expect co-operative institutions of land credit where the social cohesion so needful for them, did not exist. There was besides a want of capital and it would have been too long to wait for the constitution of companies of foreign capitalists. Another difficulty was the fact that it was not till that date that registration of property and of mortgages began as a result of the promulgation of the civil code. Previous to such registration it would have been unlikely that foreign capital would be risked in the establishment of mortgage banks.

Nothing remained except for the State to intervene and provide for the vital interests of agriculture where private initiative was wanting.

In virtue of the law of 1855, the State founded and organised the "Caja de Crédito Hipotecario" governed by an administrative body which acted as intermediary between proprietors and capitalists. Under the vigilant eye of the law this company was capable of inspiring greater faith in the financial market than could a company of capitalists.

But one characteristic of this law is that no monopoly of business was granted to the Bank established in 1855, because capitalist companies desirous of carrying on business in land credit, received the same privilege and were subject to the same obligations as the "Caja de Crédito Hipotecario". It was hoped that this would lead to the establishment in virtue of the law, of a credit institution, and at the same time attract through other companies, even though formed of capitalists, the largest possible amount of money to investment in land.

The "Caja de Crédito Hipotecario" is not exactly a State Bank though it was established with a view to public utility. It does not see to derive any profit from its transactions. Land-owners who contract loans, besides the interest due to the creditors, pay only a small percentage destined to cover the expenses of administration.

The Mortgage Credit Bank, in accordance with the law of August 29th 1855, is intended to facilitate the granting of mortgage loans, and the repayment at long terms, in yearly instalments, with interest and sinking fund. This institution is not legally authorised to carry on any transaction of other kinds, except that of issuing bonds guaranteed by mortgage. These bonds are issued in series either in the name of the holder or payable to the bearer, at the option of the borrower. He receives the capital he requires, not in cash but in bonds, which he afterwards sells on the market.

But what are the conditions as to contracting a loan? Those who desire to borrow from this bank for long terms must pass a mortgage in favour of the bank. At the same time they must engage to pay annually from the date when they receive the bond until the expiration of the contract, (1) a sum as interest not exceeding 8%; (2) a freely stipulated amount into sinking fund; (3) a sum not exceeding  $\frac{1}{2}$  % towards a reserve fund and the working expenses. These annual payments must be made half yearly in advance; if they are not paid at the expiration of the contract the borrower will be charged interest at 2 % per month.

The bonds passed in favour of the Bank must be legally secured on first mortgages on land of at least double the value of the loan. But in fact the Bank exacts additional security to that required by law. At the present time, for instance, loans are granted at most for 40 % of the value of the land mortgaged, with the exception however of those holdings which are placed in the first class (1). In the case of land of the second class, the loans are granted up to one-third of its value, and in that of land belonging to other classes, up to one-fourth of its value. Loans are granted only to one-fourth of the value of vineyards and orchards on holding belonging to the first or second class. In calculating the value of vineyard and orchards no account is taken of the value of the land, loans on which may be contracted according to its classification. In estimating the value of a landed estate with a view to loans, the wooded and mountainous

(1) Holdings are classified according to the districts to which they belong and according to the nature of the soil.

actions are not taken into account. Buildings on the real estate may, insured, serve as a guarantee for a loan to the fourth part of their value.

At Santiago and Valparaiso the regulations for mortgage loans on urban real estate have been drawn up with much administrative wisdom, but this subject need not be pursued in the present article.

In virtue of a special law of February 20th., 1905 on cheap dwellings, the Mortgage Credit Bank is authorised to lend in the form of bonds capital to the amount of 75 % of the value of the land and buildings contemplated in this law.

By another special law of November 9th., 1908 which authorised the legal constitution of an irrigation company, the Bank was empowered to issue mortgage bonds instead of those issued by the above-mentioned companies. The law makes special provision for the security of these loans.

According to the constitution of the Bank the amount of a loan must not be less than 500 pesos, and the value of the mortgaged land must not be less than 2,000 pesos (1). But the Bank does not think it desirable to ascend to these limits. When a credit account is opened on real property of small value it is often found that the sum borrowed is destined to defray rent expenses, and is not repaid when it falls due. This leads to the necessity of compulsory sale, involving legal expenses out of proportion to the sum to be recovered. Experience has proved the wisdom of not making very small loans. In fact, for many years the Bank has not granted loans for less than 5,000 pesos, nor on the guarantee of landed property of less value than 20,000 pesos.

Since 1892, many loans of 1,000 pesos secured on land worth at least 5,000 pesos have been granted. At that time it was found that in several cases these obligations were not punctually repaid, and in many cases a liquidation was necessary. Although the Bank did not immediately close, yet in 1898 it was considered better to raise the limit of the loans to 5,000 pesos, guaranteed on real estate valued at 20,000 pesos at the time. In later years many members of the Legislative Assembly being in favour of small loans, the Bank decided to grant loans even of only 3,000 pesos with a mortgage guarantee of at least 10,000 pesos.

The estimate of real property to be mortgaged is by the law of 1855 entrusted to a commission of experts nominated by those who grant the loans. The experts are required in making their estimate not only to calculate the extent and value of the property, but taking into account the date of the expiration of the loan, to consider the circumstances which might in future increase or diminish the value of the real estate.

Limits of space prevent our describing the procedure required of a borrower desiring a mortgage loan, and the information which he must supply as to the situation and extent of the property, the quality and quantity of its products, the taxes it pays, etc. On all these points the law and regulations of the Bank have laid down precise rules to ensure the security of the guarantees for credit transactions.

1) By the word *peso*, paper is always meant. The value of the gold peso is 1.89 fr., of the paper peso was on January 31st., 1912, 1.08 fr.

## § 3. ISSUE AND GUARANTEE OF BONDS.

The necessary conditions for granting a loan having been satisfied bonds to the value of the loan are consigned to the borrower. In order that these bonds may be favourably received on the money market, the law not only ensures scrupulous exactness as to their issue, the mortgage guarantee, the payment of interest and the reimbursement, but also permits the giving of such bonds as security for the discharge of a public debt or as a legal deposit, or their purchase as an investment for capital belonging to wards, the incapable, charitable institutions, savings-banks etc. The State has invested in land bonds of the Bank capital represented by paper money in circulation amounting to more than 30 millions of pesos and the fund amounting to 22 millions of pesos formed by redemption of rents.

The bonds, which may be payable either to the holder or the bearer, are issued in series, for a nominal value of 1,000, 500, 200 or 100 pesos each certificate. For every issue the following proportion must be observed: three-fifths of the whole loan must be in bonds of 1,000 pesos; of the remaining two-fifths two-thirds must be in bonds of 500 pesos, and of the remaining third two-thirds must be in bonds of 200 pesos, and one-third in bonds of 100 pesos each.

The bonds on which the interest and the sinking fund payments are the same belong to one and the same series.

There are four series in circulation. The first, at 8 % interest with 2 % sinking fund, for 21 years, was issued in 1856. But bonds of the same series with 1 % sinking fund were issued in 1903 for 28 years.

Interest is paid on this series on June 30th. and December 31st. of every year.

The second series bearing 5 % interest with 2 % sinking fund, for 25  $\frac{1}{2}$  years, was issued in 1865. Interest is paid on March 31st. and September 30th. In 1905 a series at 5 % and 1 % was issued.

The third series, for 22 years, was issued in 1870 with interest at 7 % with 2 % sinking fund. Bonds of the same series, for 30  $\frac{1}{2}$  years, with 1 % sinking fund have been issued since 1903. Interest is paid on July 25th. and January 15th. of every year.

The fourth series, for 23 years, with interest at 6 % with 2 % sinking fund, was issued in 1880. Bonds of the same series for 33 years, with 1 % sinking fund have been issued since 1900.

To guarantee the payment of the interest and capital to the creditor that is to the holders of these bonds, a reserve fund has been formed. There was at first much opposition to the formation of this fund which constitute the true capital of the Bank, because it was maintained that an institution of public utility should not accumulate capital, and thus increase the charges on its loans. But Antonio Varas, the first manager of the Bank pointed out the advantages to the borrowers themselves from a reserve fund which would increase the confidence of capitalists in the scrupulous

servance by the Bank of the obligations incurred by the issue of bonds, the value of which would thus be maintained.

According to Art. 20 of the law of 1855 the reserve fund is formed, (1) what remains of the  $\frac{1}{2}$  per cent (art. 4, no 3) paid by the borrowers, after deduction of all working expenses; (2) of what remains of the annual instalments after interest and payment to the sinking fund have been deducted; (3) of the interest exacted as a fine from unpunctual borrowers; (4) of the value of allotted bonds and of the interest due by pre-emptive right to the Bank when the former are not redeemed within ten days, and the latter within five from the date of allotment or from the date when due.

Art. 21 authorises the Bank to put the reserve fund out at interest or to invest it in public funds.

The amount of  $\frac{1}{2}$  % on the amount of the loans, paid by the borrowers on the Bank was charged in accordance with the constitution up to the year 1887, when the reserve fund having risen to \$1,991,380, while the bonds issued amounted to \$ 25,735,600, it was decided to abolish every commission, because it appeared that the reserve fund already formed, with the progressive increase arising from fines and from interest every year would be sufficient to guarantee the transactions of the Bank.

Not till 1910 was it decided that a commission of  $\frac{1}{4}$  % should be paid to the borrowers so that the reserve fund might still correspond with the extended issue of bonds.

As there are no shareholders in this Bank to divide the profits, it is provided by the law above quoted and by the executive regulations, that, soon as a sufficient reserve fund has been formed, the sums paid as fines etc. shall be used for the benefit of the debtors or for the establishment of savings-banks, which by law would have been obliged to invest their capital in bills of exchange. The Mortgage Bank has thus contributed to the support of the savings-banks by annual payments amounting to 920,000.

The Mortgage Bank is guaranteed, not only by a reserve fund, but also by the State. During the serious agricultural crisis from 1861 to 1863, the reserve fund, which amounted to \$143,737 guaranteeing a circulation of bonds to the value of \$ 5,579,400, was completely exhausted. Then the State lent the Bank a capital of \$ 100,000 which, however, it was not necessary to touch, because payments began to pour in regularly, and the disturbed equilibrium was restored.

The law departing from the principles laid down by the Code has granted the Bank special privileges with regard to the security of its credit business and the judicial proceedings necessary for the recovery of debts.

When those from whom annual payments are due (art. 16 of the law of 1855) do not fulfil their obligations, and after legal notice do not pay their debts, within thirty days, the Bank may claim possession of the mortgaged land, or require that the property be put up to auction.

Having obtained the land, the Bank receives all the profits, and when charges and other expenses are paid, it deducts the annual payments that



are due, and leaves the rest to the debtor, who may at any moment recover possession of the land by paying all that he owes to the Bank.

#### § 4. ADMINISTRATION AND CAPITAL OF THE BANK.

The direction and administration of the Bank are entrusted to a manager, a cashier, an inspector an accountant, a secretary and a board management.

These are all appointed by the President of the Republic; the manager immediately by the President, but the accountant, the inspector and the cashier are proposed by the Board of Management, and the secretary is proposed by the manager.

The Board of Management is composed of the manager, the inspector and four members, two of whom are nominated by the Senate, and two by the Chamber of Deputies.

Each Chamber, though this was not done in the case of the first Board formed for the establishment of the Bank, chooses one of the two members from among the land holders who make the largest annual payments to the Bank. Every half year the Board of Management must send to the Government a report on the transactions of the Bank, and must publish together with the annual balance sheet in the official organ.

At the beginning of every year the Board must present to the Government a detailed report of all the transactions carried out by the Bank, and of the results obtained during the preceding year.

The powers of the Board and of the separate officers are precisely defined by the rules drawn up by the President of the Republic in agreement with the Council of State.

The law of 1855 determined (art 28) the fundamental functions of the Board of Management; it must; (1) determine, within the limits fixed by the law, the proposed rate of interest and the amount to be paid towards the sinking fund on the bonds issued; (2) lay down rules for the issue of bonds, and for their maturity; (3) make each year an estimate of the management; (4) arrange for the drawing of the bonds to be extinguished, and destroy those which have already expired. The functions of the Board are honorary.

The working capital and the progress of this institution may be more closely expressed by figures which show the rapid increase in the issue of bonds and the variations in the reserve fund at different periods.

The following table shows the position of the Bank at the end of each of the six periods indicated:

Years	Land Bonds in Circulation (in pesos)					Reserve Fund (in pesos)	Percentage of Reserve Fund to the Circulation
	8 %	5 %	7 %	6 %	Total		
1868 . . . .	4,006,600	—	—	—	4,006,600	47,359	1.182
1879 . . . .	13,196,400	2,711,400	841,800	—	16,751,600	833,194	4.973
1889 . . . .	216,700	7,431,300	1,897,500	21,736,100	30,701,600	2,254,450	7.343
1899 . . . .	64,632,100	2,508,500	7,592,100	16,349,100	89,181,800	4,321,724	4.845
1909 . . . .	41,745,600	1,508,100	64,322,100	74,443,100	182,218,900	6,805,382	3.784
1 (Dec. 31st)	29,764,600	1,601,400	90,802,900	82,878,100	205,077,000	6,906,440	3.367
1 (Dec. 31st)	19,648,600	1,440,500	98,103,000	99,154,700	218,347,700	7,283,347	3.335

The work performed by the "Caja de Crédito Hipotecario" is remarkable; the loans represented by the bonds issued amounted in 1868 to 4 millions of pesos; on the 31st of December, 1910 they had risen to 205 millions of pesos, and in 1911 to 218 millions.

To judge of the importance of these figures, we must observe that in 1911 the value of the bonds issued by all the Mortgage Banks — La Caja added — amounted to \$ 323,666,800. And as, according to the Commercial Registers in 1909, the value of private landed property throughout the Republic was \$ 2,488,817,574 (of which 718 millions for rural property) sums invested in mortgages at this period were about 13 % of the total value of the landed property. Whilst in the first period (1856-1868) bonds bore an interest of 8 %, on December 31st., 1911 almost half of the bonds in circulation (\$ 100,595,200) bore interest of less than 6 %. A beneficent alleviation of the burden on the debtors was the result of various successful transactions.

Until a few years ago, loans were only made in the country itself, in 1911, the Bank issued, through French bankers, for the foreign market bonds to the amount of 40 millions of francs at 5 % in gold; and in a few days these were all taken up. For the satisfaction of all demands it found necessary to issue bonds of the same series 5 % and 1 % in gold, and to convert English money to the amount of £ 176,200, using the certificates already issued for the United States Exchange.

The reserve fund has fluctuated considerably with the varying sums in circulation to which it had to serve as guarantee. From 1 % at the close of 1868 the proportion of the reserve fund to the bonds in circulation rose to 7.3 %, and then fell to 3.3 % on December 31st., 1911.

These variations were due to various causes. We must first observe that the commission paid by debtors to the Bank was reduced in 1878 from 1 1/4 %, and totally suppressed in 1887, because of the large increase in the reserve fund.

But there were two other causes. The first was the financial help afforded to the Bank by the formation and working of the Savings Bank at Santiago, which has served as a model for similar institutions in all parts of Chile. The second cause is the loss suffered in serious economic and cultural crises.

The first of these, occurred in 1861-1866 and the Bank, then in its early stages, saw its whole reserve fund disappear.

The next shock to its interests was in 1879 on the breaking out of the Pacific war, when its bonds fell considerably on the financial market. This depression was, however, only temporary.

A third disastrous period was from 1898 to the close of 1909. In the twelve years the Bank suffered losses to the amount of \$ 1,102,500. Notwithstanding this, the increase of the reserve fund was not insufficient to balance these losses but there was a net gain of \$ 2,609,700.

As the present manager of the Bank, Luis Barros Borgoño, has observed, the losses suffered during these twelve years may be considered as a light sacrifice in comparison with the transactions carried out, and the advantages effected by keeping up the price of real estate.

However, again to increase the reserve fund, the Board of Management of the Bank reintroduce, at least for a time, a commission charge of 1/4% on the amounts of loans.

In this article we have endeavoured to show our readers the characteristics of land credit in Chile and the magnitude of the work performed by the "Caja de Crédito Hipotecario", set on foot by Antonio Varas, who proposed the law for its foundation and for twenty five years was manager of the Institution.

From what has gone before, it can be unhesitatingly affirmed that the institution can bear comparison with any similar in the most advanced countries of Europe.

We may also say that such an institution, founded more than half a century ago, was in advance of its period, and that it now holds a position corresponding in all points with the economic development of the country. The importance of this institution is also recognised abroad. In one of our recent numbers our readers will have read that the Republic of Costa Rica, wishing to advance the interests of rural property by the creation of a Mortgage Bank, took for its model the "Caja de Crédito Hipotecario" founded in Chile in 1855. We may also add that the credit certificates put in circulation by this Bank are officially quoted on the Paris Bourse, and, by consent of the Ministry of Finance of the French Republic are considered as equivalent to Government stock.

In a future article we shall continue the subject, speaking of other mortgage institutions created under the same fundamental law of 1855, as well as of the Savings Banks, of which the first was founded in Santiago and affiliated to the "Caja de Crédito Hipotecario."

# PUBLICATIONS OF RECENT DATE ON CREDIT IN LATIN AMERICA.

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## Part IV. Miscellaneous

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### AUSTRALIA.

#### VARIOUS FORMS OF LAND SETTLEMENT IN AUSTRALIA.

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The study of the various systems of land settlement adopted by the States of the Australian Continent may be very profitable, as the country is likely to have a great development, embracing as it does so large an area (2,974,581 square miles), still very thinly peopled (4,425,083 inhabitants). It is just on account of this small population that the Australian States have again begun to encourage European immigration and more specially the immigration of agriculturists. It is evident then, even at this point of view, how opportune may be the lessons to be learned from the various systems of land concession. Although in their general outline these systems present great similarities, yet they differ, in a variety of particulars, in the laws of each Australian State, especially in regard to the term and the conditions of the grant.

In our first two sections we shall deal with the general history of the land concession in Australia and shall mention the most striking charac-

teristics of the various forms of land concession now in force, and deal more at large in the later sections with the separate States, in the following order: (a) New South Wales, (b) Victoria, (c) Queensland, (d) South Australia, (e) West Australia, (f) Tasmania.

### § 1. HISTORICAL OBSERVATIONS.

*The Earliest Grants of Land.* — Towards the end of the eighteenth century, the British Government, advised of the frequent voyages of exploration organized by the French, hastened in its turn to organize others with greater frequency and with more definite intentions. These voyages, continued in the nineteenth century, ended in Great Britain acquiring possession of the whole Australian continent. At the same date, the British Government found itself, by the proclamation of the Independence of the United States of America, shut out from that territory, in some point of which it had planted penal colonies, so that it had again to solve the problem of the transportation of convicts. It was then thought that the Australian territory might be utilised in the same manner as the American colonies and this idea found its practical realisation in 1788.

In the earliest days of Colonization in Australia, the soil of the country was alienated by simple Royal Concession and the Governor of the province, in conformity with instructions received from the State Secretary, made the transfer. But on April 25th, 1787 special instructions were given to the Governor in terms of which he received power to grant land free for 10 years, only to discharged prisoners. During this initial period, the grantee was not bound to pay any tax, rent or dues, but at the termination of the ten years, he had to pay an annual sum of 6d. for every 30 acres of land received. Thirty acres constituted the maximum amount a man might receive, unless he were married, when he could have another twenty and ten more acres for each child born afterwar and supported by him.

These provisions were first applied in New South Wales and more precisely in the neighbourhood of Parramatta, where, in February 1789, a farm of 30 acres was granted to a discharged prisoner, named James Ruse.

In the same year, further instructions of the Secretary of State empowered the Governor to grant land also to free immigrants and to the sailors who, after being detached for service in New South Wales, show desire to settle in the colony. Let us incidentally observe that New South Wales at that date comprised the whole Eastern portion of Australia. In the new provisions by which the concessions were extended to free immigrants and sailors, it was laid down that no person might receive more than 100 acres of land, and that for every 50 acres he must pay an annual rent of one shilling. This latter condition was to come into force 5 years after date of the concession.

The first free Australian colonist reached Bellona in January, 1793 and received a farm about eight miles from the town of Sydney.

*Grants of Land in Urban Centres.* — All the land granted at that date, whether to discharged prisoners or to free immigrants and sailors, was situated in the environs of the town of Sydney, but in 1811 the Governor requested and was granted power to make grants of land within the limits of the city itself. These grants differed from the former in being only leases. The term for which the grant was made was 14 years and in some cases 21, but no definite statement can be made in regard to the amount of annual rent to be paid, since this, fixed from time to time by the Governor and varying at his discretion and with the appointment of different Governors, fluctuated considerably.

In 1824 and 1826 the Colonial Secretary laid down some rules as to the grant of land to immigrants, but in 1829 the contracts of lease were altogether abolished and the land was granted free.

Yet, five years later, the Governor thought it advisable again to introduce the earlier form of grant and, with suitable modifications, it was adopted for land in urban centres. It was laid down that such land could only be granted on lease, but that it might become the free property of the colonist on his paying an amount corresponding to twenty times the annual rent or erecting buildings on it of a value of £1,000 sterling. But as regards the payment of rent it seems that it was generally very irregular, so that the Government held it advisable to issue special provisions in order to facilitate the liberation of the farms. In 1846 and 1849, established that those who had paid their rent for twenty years would be exempt from any further payment and might retain the land as their free property. It was further established that those who had paid their rent for more than 20 years might have the difference refunded to them, and that a colonist might be allowed at any time to make payment in a lump sum of the balance still to be paid to make up the amount of twenty years' rent and thus to liberate his holding. Finally an order of 1851 established that all rent above two shillings a year for every hundred acres should be reduced at the end of the year to a single uniform rate.

*Sale of Land.* — At the same time the system of sale of land had been in favour among those who directed Australian Colonisation, and, in fact, a Government Order of March, 1825 provided that land might be alienated to free colonists even by means of private sale. The minimum price per acre of land was fixed at five shillings; but not more than 4,000 acres might be sold to one person, nor more than 5,000 to a family.

As we have said this system of alienation by means of sale was introduced while the ordinary system was that of grants of land on lease, and it might have been thought that the new system might become an alternative to the old, but it was not so: the two it appeared could remain in force contemporaneously. But since the system of sale, besides be-



ing more profitable for the administration, in practice gave good results. The Government studied regulations for it, at the same time as it made preparations for the suppression of the system of grants of land on lease.

In 1830 a Commission of three persons was appointed to divide the Eastern portion of the Colony into counties, districts and parishes and to fix a fair price for future sales, in relation to the natural and topographical characters of the land in each case.

The area thus systematised included 19 counties and corresponded to what is now the central portion of the Eastern division of New South Wales; consisting of about 34,505 square miles, bounded on the North by the River Macleay and on the South by the Murrumbidgee.

It was in February, 1831 that the Government decreed that thereafter Crown Lands could only be alienated by means of auction and that the upset price should be 5 shillings per acre. In 1839 the upset price at auctions was raised to 12 shillings, but at the same time also the principle of option began to be introduced into the Australian laws. In fact, the law of 1839 established that when at auctions for the sale of certain lots of land with the upset price of ten shilling a hectare there were no bids or, if for any other reason sale of these lots could not be arranged, they might be sold privately always at the upset price of 12 shillings per acre. The purchaser had then a certain freedom of choice, but only in the case of those lots that on being offered for sale by auction had found no purchaser.

*Land Regulations of 1842 and 1847.* All the provisions of which we have spoken above emanated in turn from the Imperial Authorities and lasted till 1841: in October of that year it was left to the discretion of the Governor to establish what land might be sold and at what price. But the law of the Imperial Parliament of June, 1842, limiting the powers of the Governor, confirmed the principle of sale by auction and laid it down that the land, before being offered for sale, must be accurately surveyed and the upset price be fixed at 20 shillings an acre.

In March 1847 a new classification of the holdings was made in execution of the *Waste Land Act* of 1846 and the territory was divided into (a) *Colonised Districts*; including the 19 original counties and the land situated in the counties of Stanley and Bourke on the borders respectively of the colonized territories of Moreton Bay and Melbourne; (b) *Intermediate Districts*, comprising a belt of land beyond the limits of the colonized districts and extending inland, in some places 50, in others 100 miles. Some portions of this belt were already occupied as pastoral land; (c) *Uncolonised Districts*; extending westwards to the extreme limits of the State. The law of 1846 maintained the principle of grant of land by means of auction sale and private purchase, but again introduced the system of lease for a certain time, the limits of which might vary according to the decisions of the Governor. The grants in form of lease might be made indifferently in any of the three divisions, but the land might be used only for pasture. The law provided further that the lessee might at any time liberate the land leased to him and become proprietor of it by payment

minimum amount of one pound per acre ; and that, on the expiration of the contract, he should retain, under the same conditions, the right of redemption of all or part of the land held on lease by him.

*Pastoral Lands.* Before the Imperial law of 1846, of which we have seen above, regulated the grant of lands for grazing, such land had been granted in various manners : in the earliest years, before May 1827, simple grants of occupation were issued, but after that date a regular grant was made and the holder of the land had to pay a small quit rent of 20 shillings per 100 acres. The grant might be renewed year by year by tacit agreement, but at six months' notice the land had to be vacated. These were the intentions of the law, but in fact there were frequent abuses, because the colonists, as their cattle increased, instead of applying for the grant of a new area of land, quietly advanced inland and established themselves on land without any other right than that of the first occupant. To meet the Crown Lands from such encroachment, the 1833 law was promulgated ordering the appointment of certain Commissioners and charging them to see that the sovereign rights over land should not be infringed. This provision did not prove in practice sufficient to prevent abuses, so that in 1836 new provisions had to be issued imposing new penalties. Again in 1839 a law was promulgated which, in order to provide for the expenses in the inland districts, established an annual tax on cattle : 1. per sheep, 1½d. per head of livestock and 3d. per horse).

This is in brief outline the history of the pastoral lands previously regulated by the Imperial law of 1846 ; but after this law, as we have seen, quite a new system was introduced. At first the contract of lease was for a year and the payment for the concession was in proportion to the area of land granted ; according to the new systems however, the lease was for 14 years and included in the region not yet colonised, 8 years for land in the immediate belt, and still for one year only for land in the region already colonised. The quit rent was not fixed, but was in proportion to the speculativity of each district for the support of livestock ; it was established that the holder of the land must pay a sum of £10 per 4,000 sheep stationed on the land and £2 10s. per every additional 1,000 sheep the land could support according to official calculations.

These provisions of the new law did not all meet with public approval, the greater number of the citizens held that they tended to close the way to colonization : that thus the efforts of many honest colonists who hoped to obtain free possession of their farms would be rendered vain ; that, in the last analysis, the Crown would lose a fairly large income which might have been invested in works of public utility and for the promotion of the common good.

Meanwhile, in the inland districts, far from the region of colonisation, colonists had scattered themselves, establishing themselves on the soil without any right of possession ; land would have to be granted to these at a rate of 2 shillings per acre, when it might have yielded from one to four

hundred and in addition no security could be asked for the payment of that contemptible sum.

The 1846 law remained in force in New South Wales up to 1861; in Victoria and Queensland, which were detached from the principal colony respectively in 1851 and 1859, until revoked by special laws in each State.

The discovery of gold in 1851 and the consequent increase in the Australian population greatly changed the conditions of land settlement. Each Colony made studies of the best system to adopt for attracting industrial and agricultural population to its territory. Victoria, Queensland and Tasmania had the same agricultural laws as New South Wales up to the date of their separation from it. Even in West and South Australia the laws still have the same general character as those of New South Wales, but in any case the new conditions of colonisation, as we shall see, had a different effect on the laws in each State.

## § 2. ADMINISTRATION AND CLASSIFICATION OF CROWN LANDS.

Before dealing with the special forms of colonisation in each State of Australia, before speaking of the special administrative principles and systems of classification of the land, it will be advisable, so as to avoid useless repetition, to give the general fundamental characters common to all the States.

In each of the Australian States there is a *Lands Department*, for the administration of Crown Lands and it, or rather the Minister responsible, has to carry out the laws relating to alienation, occupation and administration of the lands. However, the administrative functions are all concentrated in the *Lands Department*, because, as all the States are subdivided into so many districts (*Land Districts*), a *Land Office* is necessary in each. There is a special officer (*Land Officer*) in charge of each of these Offices, with the special duty of supervising the carrying out of all land laws as far as the particular district is concerned. In addition to this local offices the States have thought it advisable also to create other offices with jurisdiction limited to a single district or extending to a group of districts. These offices are the *Local Land Boards* or special commissionerships supervising the work of the *Land Officers*.

It is well to observe at once that in certain cases the execution of certain special laws on Crown Lands is entrusted to a special office under the direct supervision of the Minister. Thus, in New South Wales, there is the *Waste Lands Purchase and Management Board* and in Tasmania the *Crown Lands Board*. We shall explain the functions of these special offices in treating the States separately. The administration of Crown Lands is not reserved exclusively to the *Land Boards*, or the offices dependent on them. In each State a *Mines Department* has been created and to

is reserved the right of passing contracts and granting privileges respect to the Crown Lands in which the mines are dug.

In regard to the classification of Crown Lands it may be said that it has been made in almost uniform fashion in the greater number of the States, taking into consideration their position in relation to the inhabited centres, the system of roads, the suitability of the land for certain forms of cultivation or other utilisation, the climatic conditions and sometimes other circumstances of minor importance.

So much said, it remains to be seen how the special laws of each State regulate the grant of land, the rights of ownership, the purchase price, the rent to be paid and all the conditions of accessory character, especially those tending to the improvement of the land granted.

Leaving the details aside for the moment, let us say at once that the systems of concession adopted in each State are established by each individual *Lands Department* and that all may be included under three essential kinds: (1st.) Grant of free proprietors' rights; (2nd.) definite sale (sale by public auction or special sales); (3rd.) conditional sale. Here, we have said we have essential characteristics of the grant; yet, if we consider the systems of concession in their most important points, we may group them in six principal classes.

In the first class may be included all *free grants* of land; grants, that is, of free possession or for temporary use without rent but with the obligation for the grantee to reside on the land and cultivate it.

We have seen that free grants of land were abolished in 1831, but all the same the laws of the various States still contain provisions for the free grant of lands, provided this be for the public advantage. In addition, each State the administration indicates certain lands to be reserved for purposes of public utility and therefore not to be granted to private individuals. The reservation of these lands is sometimes a permanent, sometimes a temporary matter, but, in either case, is liable to variations. When land reserved is shown in practice to be insufficient for the purpose for which it was intended, or when, on the other hand it is shown to be more than is necessary, the area may be extended or reduced.

In the second class we may include all systems of *alienation by means of public sale*, whether by public auction, or special sale and whether payment for the land is to be made immediately or may be deferred. In any case, except sales under the *Closer Settlement Acts* and similar laws, the sole condition for the grant is the payment of the purchase price.

In all the States, from time to time, lots of land are sold at public auction and the notice of these sales is published in the *Gazette* with all details as to price and conditions of sale. Except in South Australia, where sales are always for cash, payment in instalments is allowed. In the majority of the States, in addition to sale by auction, special sales are permitted, but only in the case of land that has found no purchaser when offered at public auction, or when for some reason or other the contract cannot be concluded. Special sales are further admitted in the case of

certain farms which, either through their small size or for other reasons could not be sold to advantage at public auction.

In the third class we may include all grants on *conditional sale*; that is, the acquisition of full ownership is made subject to the observance of certain conditions independent of the payment of the purchase price.

This system is in vogue in all the States of Australia, and the conditions are chiefly that the grantee must make improvements on the land received and render it more productive. The chief condition is that the grantee must reside on the land and cultivate it: the purchase price is paid in yearly or yearly instalments. The other conditions vary greatly from one State to another: but generally it is stated in the contract that the sale is not complete until a certain period has elapsed and meanwhile the purchaser, independently of payment of the entire purchase price of the annual instalment, must satisfy the prescribed conditions. Queensland and in West Australia, farms are also granted as "homesteads", that is, the grantee does not pay any money for them but since he is bound to observe certain conditions, on pain of forfeiting the land, the system is more suitably included in this class than in that of free concession.

In the fourth class are included all *temporary grants* on lease or special authorization of the *Lands Department*.

The term of lease and other accessory conditions vary greatly in different States. In Victoria, Queensland and South Australia, for example, contracts of lease are passed for an indefinite length of time; and the value of the land granted also varies greatly: the stock farms are comparatively large. In each State there are model contracts for ordinary leases, as well as for other special purposes, and special classes of holdings, as, for example, those for mines and auxiliary purposes.

In the fifth class we may include all the various forms of home colonization regulated by the *Closer Settlement Acts* and similar laws, as well as the *Village Settlement Acts* and *Small Holdings Acts*.

These laws authorize the Government to repurchase holdings previously alienated that have not been exploited. This occurs especially when a single person holds land of too extensive an area for him to exploit alone or to give due attention to. In such cases, the Government resumes possession of the land and sell it again stipulating more advantageous conditions of payment and dividing it into so many farms of a size more easily adapted to the colonising efforts of the owner. In some States also, special laws have been issued authorizing the constitution of cooperative colonising societies, village settlements and labour colonies.

In New South Wales, Victoria, Queensland and Tasmania, the Government may resume the land and even expropriate it, but in West and South Australia only with the consent of the holder.

Finally, in the sixth class we include any occupation of land authorized by the *Mines Department* of each separate State, either on a contract lease or as a simple grant. These departments have the distribution of the mining districts, and of such ordinary land as may serve for the

work necessary in connection with a mine. But in any case the grant must be in accordance with the concessions made by the *Lands Departments*. In addition to the mining areas the *Mines Departments* have also the administration of certain holdings of special character or reserved for special purposes.

Having thus summarised the various systems of land concession, it will be well to observe in conclusion that in many States special laws have been issued authorizing the Government, in whatever form the grant be made, to expropriate the alienated land, and with this object, provision made that, in the contracts of sale and in the awards, Lands Clauses inserted in affirmation of this right the Government reserves to itself. This has been laid down as a principle, but in practice it is only resorted to when necessary for the execution of works of public utility. In the laws, meanwhile, in addition to the specification of cases in which expropriation is allowed, the principles are also indicated that must be followed in fixing the compensation to be granted to private owners and the steps to be taken in order that a friendly arrangement may be arrived at. Land granted on lease for grazing may be resumed on simple notice at short date, the lessee has a right to compensation for expenses he may have incurred in liberating the land from encumbrances, as also for improvements effected out by him.

We shall speak of the progress of colonisation in each State, when we deal with the States separately; meanwhile we may say that it is now a general tendency, on the expiration of the initial period, in which for the direction of the work of colonisation it was advisable to adapt themselves to every form of concession, to endeavour to reduce the area of the holdings and prevent the accumulation of large estates in the hands of a single person. At the same time the Governments are studying also how to reduce the number of holdings granted on lease and especially of those which are of large area. In fact when a contract is annulled, either on the expiration of the term or for any other reason, the land is divided, into so many small holdings which are granted for colonisation on the system of deferred payment. In many cases the administration has reserved large areas of land in virtue of the provisions of the various *Closer Settlement Acts*, and has granted the largest facilities to the working classes, enabling them to obtain possession of land, and then, within a suitable time, by satisfying conditions not burdensome to acquire, the ownership of the same. This system, promoting the love of the land in the labouring classes, may advance Australia on the way to a more rapid development.

## JAPAN.

### INDUSTRIES AUXILIARY TO AGRICULTURE.

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#### § 1. INTRODUCTION.

Before speaking of the various kinds of industries auxiliary to Japanese agriculture and their importance in the rural economy of the country it will be advisable to determine within what limits these industries may be considered auxiliary. For instance, it might seem at the first glance to be a mistake to include silkworm rearing among these industries though alone yields annually more than 340,000,000 frs. However, according to the principles guiding the Japanese Department of Agriculture in its enquiry into the industries auxiliary to agriculture, we should include among them also silkworm rearing, the manufacture of tea, etc., while we consider those as secondary industries in which the farmer engages his leisure time or in the long periods of unemployment or of slack work or those that, as requiring less expenditure of energy, are generally entrusted to the weakest members of the family, who are not employed in the cultivation of the soil.

The industries auxiliary to agriculture, which, in many countries are only a profitable complement to agricultural work and represent an increase in the incomes of the agricultural population not absolutely necessary, in Japanese agriculture, on the other hand, are a real economic

nessity. This necessity is principally due to the special feature of Japanese agricultural property, namely, its excessive subdivision.

As we have had occasion to see elsewhere, about 70 % of the total number of Japanese farms have an area of not more than 1 *cho* (0.99 ha.); though the cultivation is eminently intensive and although the requirements of the rural Japanese population are small, it is not to be expected that the net yield of a farm of less than 1 ha., can, by itself, be sufficient for the support of families as large as those of the Japanese farmers of other countries.

This simple fact is sufficient to give an idea of the importance of the secondary agricultural industries and, consequently, of the extension of them by them in Japan. Thus, it may be observed that their importance is greater in those provinces in which the subdivision of agricultural land is greater (central provinces of the island of Honshu), and least in provinces where the opposite conditions prevail (Hokkaido, Shikoku). This is due, not only to economic needs, but also to the material possibilities, as the smaller the farm to be cultivated the more time the farmers are able to bestow on auxiliary industries. In any case, it is generally true in Japan that the yield of these industries varies between 10 and 25 % of that from agriculture pure and simple.

## § 2. VARIOUS KINDS OF INDUSTRIES AUXILIARY TO AGRICULTURE.

The secondary industries carried on by Japanese farmers may be grouped as follows:

- 1st. Industries connected with sericulture:
  - (a) Silkworm Rearing,
  - (b) Spinning,
  - (c) Preparation of Silkworm Eggs,
  - (d) Improvement of Various Breeds of Silkworms, such as *Sakusan* (therea Pernyi), *Chosan* (*Attacus Cynthia*), etc.
- 2nd. Gardening:
  - (a) Cultivation of Fruit Trees (Pears, Apples, Oranges, *Kaki*, etc.),
  - (b) Cultivation of Vegetables and Green Stuff.
  - (c) Preparation of Preserves, Marmalade, *Yohan*, etc.
  - (d) Cultivation of Flowers,
  - (e) Preparation of Seeds, Bulbs, Shoots, etc.
- 3rd. Cultivation of Special Plants (Tea, Tobacco, Plants for Dyeing, Medicinal Plants and the like).
- 4th. Industries in relation to the Various Classes of Livestock Improvement:
  - (a) Improvement of Horned Cattle, Horses, Pigs, Sheep etc.



(b) Treatment of the Secondary Produce of Livestock Improvement (Butter, Dairy Produce, Salt Meat, Bacon etc.).

(c) Poultry Improvement,

(d) Beekeeping.

5th. Special Preparations and Manufactures (Preparation of Tea, Various Kinds of Flour, Manufacture of Mats, Extraction of Indigo, Camphor, etc.).

6th. Forestry Industries :

(a) Cultivation of Forest Trees (Cryptomeria, Bamboo, Firs etc.)

(b) Industries dependent on Forestry Industries (Charcoal Burning, Manufacture of Paper from the Bark of Trees, Manufacture of Special Kinds of Incense).

(c) Selection and Gathering of Special Medicinal Plants ;

7th. Hunting and Industries connected with it (Preparation of Skins of Leather, of Objects worked in Bone or Horn, etc.).

8th. Fishing and Industries connected with Aquatic Produce :

(a) Fishing properly so called ;

(b) Preparation of Aquatic Produce (Preparation of Seaweeds *Nori*, *Aonori*, etc.).

(c) Rearing of Aquatic Animals (Oysters, Crabs, Lobsters, etc.)

We shall now give some fuller particulars as to the chief of the industries.

### § 3. INDUSTRIES IN CONNECTION WITH SERICULTURE.

(a) *Silkworm Rearing*. There are few farmers' families that, with compatible with the climatic requirements and with their occupations in connection with the cultivation of the soil, are not engaged in this branch of industry. More than 30 % of all the Japanese farming families are concerned in it: taking into account that in Yezo and in the more northern provinces of Honshu, the development of silkworm rearing is necessarily limited by the severity of the climate, it may be asserted that more than 80 % of the farmers' families inhabiting the temperate and warm regions of the Empire occupy themselves with the rearing of silkworms. In recent years this industry has notably increased; especially, on account of the provisions taken for its protection by the State and the various sericultural associations, in their turn encouraged by the Government, has the production of cocoons increased 56 %, from an annual total of 2,526,181 *h* (4,547,126 *hl.*) representing about 85 ½ million yens to a total of 3,900,000 *hoku* (7,021,373 *hl.*) valued at 132 million yens (340,560,000 francs).

We have the following data for the total production of cocoons in 1910

	Number of Families occupied in Silk-worm Rearing	Number of Papers of Eggs produced	Quantity of Cocoons produced per Paper	Total Production of Cocoons	Amount of Production — Yens
			hl.	hl.	
Spring Production . . . . .	1,463,610	2,550,841	1.7100	4,363,324.2	87,854,446
Summer " . . . . .	562,399	672,874	1.3446	905,157.0	14,976,565
Autumn " . . . . .	987,056	1,617,805	1.0836	1,752,892.2	29,177,513
Total . . . . .	—	4,841,520	—	7,021,373.4	132,008,554

But for the better appreciation of the importance of this auxiliary industry in the domestic economy of Japanese farms, we must consider the average production per family occupied in it. The data are given in the following table :

	Average per family		
	Number of Papers of Eggs	Cocoons Produced	Value of Cocoons Produced
Spring Production, . . . . .	1.74	hl. 2.97	yen 60.03
Summer " . . . . .	1.20	" 1.61	" 26.63
Autumn " . . . . .	1.64	" 1.77	" 29.56

It follows therefore that, on an average, every family engaged in silk-worm rearing derives from it a gross additional revenue of about 115 yens 297 frs.). Deducting the necessary expenses — which are very small — may be considered that the average net revenue varies between 200 and 30 francs which is an increase of about 35 % on the average income of the Japanese agricultural households.

(b) *Spinning.* Silk spinning especially from spoilt, or pierced or double cocoons is even still more important than silkworm rearing, though the position of the industry seems somewhat stationary.

Machine spinning, extensively carried on in the factories, naturally, tends more and more to take the place of home spinning above all on account of the greater uniformity in the quality of the raw silk produced, which gives it a title to preference, especially in the export trade. Yet, either through economic necessity or through habit, many families still undertake home spinning, the amount of the raw silk thus obtained, although, as we have said, tending to decrease is still more than 30 % of the

whole silk production of Japan. The following table gives some comparative figures of the machine and home production of raw silk between 1903 and 1910 :

Year	Machine Production kgs.	Home Production kgs.	Total Production kgs.	Percentage of Home Production
1903 . . . . .	4,361,591	2,554,871	6,916,462	39
1904 . . . . .	4,486,268	2,491,433	6,977,701	35.7
1905 . . . . .	4,526,655	2,369,958	6,896,614	34
1906 . . . . .	5,282,258	2,456,254	7,738,512	31.6
1907 . . . . .	6,169,778	2,598,300	8,768,078	30
1908 . . . . .	6,684,058	2,776,621	9,560,679	30
1909 . . . . .	7,615,752	2,689,084	10,304,836	26
1910 . . . . .	8,406,457	2,853,136	11,259,593	25.4

From the preceding table it is clear that while the total amount of home production remains almost stationary, its proportion to the total amount of silk produced is rapidly decreasing. This is besides inevitable, for the manufactories increase their production by means of cocoons imported from China, India and Turkestan and especially produce silk for exportation, while the families engaged in home spinning can neither increase their production nor abandon it. On the other hand, they do not suffer so severely from the competition of the factories as might be imagined, because, in view of the low price of labour and of the rudimentary machines used in home spinning, the farmers can command prices equal to those of the manufactories. The want of uniformity in the quality of the silk obtained by home spinning is, besides, of no great importance, as the produce is exclusively intended for home consumption.

We have the following data in regard to the number of families engaged in silk spinning in 1910 :

Quality of the Produce	Farms on which Silk is Spun		
	by 10 or less Spinners	by more than 10 Spinners	Total
Raw Silk . . . . .	329,289	1,226	330,515
Silk from double cocoons . . . . .	40,522	242	40,764
Total . . . . .	369,811	1,468	371,279

In that year, the amount of raw silk spun at home was, as we have seen, 2,853,136 kgs. : if to this be added 179,902 *kawan* (676,431 kgs.) from double cocoons and 292,600 *kawan* (1,100,176 kgs.) from various waste silk (*woshi hibiso*, etc.) we obtain a total of 4,629,743 kgs. of a value of 42,017,767 yens (108,405,838 frs.). Distributing this amount among the 371,279 farms engaged in home spinning, we obtain a gross average of 113.14 yens (291.90 frs.) per farm. If we consider these as the profits of the farmers spinning raw silk exclusively we obtain an average of 111.63 yens per farm. A somewhat larger profit is made by those farmers that spin silk from double cocoons, the average in their case being 126.56 yens (326.52 frs.).

(c) *Production of Silkworm Eggs.* This is an undertaking which, if it does not require large capital still has need of a certain degree of technical ability. Not only so, but the constant supervision to which the producers are subjected by the law (1) renders it difficult for the small farmer to undertake and exercise the industry. There are thus many producers who make this industry their principal occupation and at the same time carry on agriculture only in order to supplement their insufficient gains and be better to maintain an economic equilibrium in the months in which they cannot devote themselves to the production of eggs. In this case we might almost consider agriculture as auxiliary to the industry of the production of silkworm eggs, though that does not prevent this industry, in certain cases, which are becoming rarer every day, and when practised on small scale, from being considered as auxiliary to agriculture. In any case the two occupations are always associated. More recent statistics of the production of eggs show that the families of farmers engaged in this industry were in 1910 altogether 15,037. This number, very small compared with that engaged in rearing the silkworms and treating the silk, is proof of what we have said above. The number of papers of eggs that year was 4,578,329, with a total of 367,808,095 eggs. The total value of these eggs, according to the statistics published by the Department of Agriculture, was about 13,600,000 yens (35,320,000 frs.), giving an average of 10.50 yens (2,350 frs.) per producer. From these results it is easy to see that this industry is carried on by individual producers on a much larger scale than the others we have considered.

(d) *Improvement of Special Breeds of Silkworms.* The improvement of special kinds of silkworms, such as *Sakusan* (*Antheraea Pernyi* Guer-Men) and *Yamamai* (*Antheraea Yamamai*) is almost entirely limited to a few farms in the district of Nagano and to some others in the district of Ibaraki. The number of farms in 1907 engaged in the production of cocoons of the *yamamai* (native to the district) was about 216; this number has remained almost the same. The annual profit is about 10,000 yens (25,800 frs.).

(1) Cfr. *Annuaire intern. de Legislation agricole. Law No. 47 on Sericulture, March 28th., 1911, p. 314 et seqq.*

## § 4. CULTIVATION OF FRUIT AND VEGETABLES.

The importance of this very widespread industry auxiliary to agriculture, has rapidly increased in recent years, above all, on account of the increased exportation.

The figures reproduced below give us an idea of the value of the immediate and secondary produce of this industry.

*Amount of the Immediate and Secondary Produce Derived from the Cultivation of Fruit and Vegetables between 1905 and 1909.*

	1905	1906	1907	1908	1909
Fruit . . . . . yens	37,273,835	30,829,139	32,634,318	32,902,581	51,589,213
Vegetables and Green Stuff . . . . . »	49,436,589	49,867,866	53,368,558	51,959,764	99,286,666
Flowers . . . . . »	517,986	1,201,830	2,371,064	1,430,938	1,496,568
Preserves and other Secondary Products of Fruits . . . . . »	1,290,775	1,191,043	1,122,650	996,683	1,313,453
Total . . .	78,519,185	83,089,878	90,496,590	87,289,966	153,676,666

From the above data it appears that the increase in the value of the yield, between 1905 and 1909, was 97 % and that, in the two years 1909 alone, it was 76 %. Although the cultivation of fruit and flowers demands the investment of no small amount of capital, it may yet be affirmed that there is no agricultural household in Japan that does not occupy itself with these two branches of industry, deriving therefrom a by no means inconsiderable profit.

The Statistics for the cultivation and production of fruit trees have been united in the following table showing the harvests of 1909 and 1910

Classes of Fruit Trees	1909			1910		
	Number of Plants Cultivated	Production	Amount (yens)	Number of Plants Cultivated	Production	Amount (yens)
Citrus Fruits, Pears, Apples, Kaki, etc. . .	18,194,103	kg.	170,332,222	7,002,138	18,866,291	211,141,589
	26,151,572	330,374,520	31,319,762	27,999,470	378,790,888	36,679,362
Jums, Chest- nuts . . . .	?	hl.	3,065,570	?	2,996,775	12,078,732
	187,900	kg.	2,498,614	110,311	238,445	2,083,023
Other Fruit. . .						92,663
Total . . .	—	—	51,480,223	—	—	58,736,448

As we see, in a single year, the increase in the yield of fruit was about million yens (20,500,000 frs.). This increase is chiefly due, as already pointed out to the considerable increase in the export in recent years. In fact, while in 1908 the export of Japanese fruit did not exceed 961,911 yens (481,730 frs.), in the next year it rose to 1,162,784 yens (3,000,000 frs.), to reach in 1910 1,185,702 yens (3,059,111 fr.). The countries to which most of this fruit it exported are Asiatic Russia, Kuang-Tung and Canada. The production and export of vegetables and green stuff is far more important. We have already seen the amount of the yield in the five years 1905-1909; we shall here give some statistics on the matter for the years 1909-1910.

*Area cultivated with Vegetables and Green Stuff and Amount Produced in 1909 and 1910.*

	1909	1910
Area Cultivated . . . . ha.	339,161	323,497
Amount Produced . . . kg.	5,479,072,000	5,729,375,200
Value of Produce . . . yens	99,286,660	122,247,645

Also the export of vegetables and green stuff increased somewhat in the two years 1908-1910; this increase is still, however, far less than that of fruit. In fact, the production increased 23 % between 1909 and 1910, while the export, which was 1,168,773 yens (3,015,434 frs.) in 1908 is hardly 1,406,465 yens (3,628,680 frs.) in 1909 and 1,530,720 yens (3,940,258 frs.) in 1910, thus showing successively an increase of 19 % between 1908 and 1909 and of 9 % between 1909 and 1910.

The manufacture of preserves and other fruit produce has rapidly extended in recent years, above all since the introduction of European systems of manufacture and the extension of the use of these products. The provinces in which these industries are most flourishing are Nagasaki and Fukuoka where the annual production is about 400,000 yen (1,032,000 frs.).

Great progress has been made in recent years in the production of pot plants, formerly almost entirely neglected. Generally, however, it is carried on by florists properly so-called: however, it is no rare thing for farmers' households to engage in it, above all in view of the not inconsiderable profits it brings in. Thus, for example, in the provinces of Saitama, Kanagawa, Kagoshima, etc., an industry auxiliary to agriculture very widely diffused, is the cultivation of lilies, the bulbs of which are exported, chiefly to America and England, to an amount of 600,000 or 700,000 yens.

With the increased cultivation of fruit trees and of mulberry tree the demand for nursery garden plants has also increased. Thus, in addition to the cultivation of fruit trees and of mulberry trees a new industry has been started, which would not, however, by itself, have sufficed to satisfy the continually increasing demand. The societies of agriculture and other corporations assisted in the supply of plants, both granting them freely and selling them in the same way as the private producers. The statistics we give below are for the period July, 1910-June, 1911.

Plants	Produced by Societies of Agriculture and Other Corporations			Produced and Sold by Private Persons	
	Given		Sold	Number of Plants	Amount (yens)
	Number of Plants	Number of Plants	Amount (yens)		
Fruit Trees . . . . .	142,872	450,300	21,336	22,108,882	793.6
Various Kinds of Mulberry Trees . . . . .	12,408,641	8,249,125	43,246	212,906,114	958.1
Total . . . . .	—	—	64,582	—	1,751.7

The Report published by the Department gives among others following data with regard to the cultivation of plants for special such as colza, tea, sugarcane, hemp, indigo, etc.

Plants	Amount of Production (yans)	
	1909	1910
Colza . . . . .	12,625,188	12,576,612
Tea . . . . .	12,702,283	13,591,830
Kozo (1) . . . . .	4,073,724	3,800,296
Tobacco . . . . .	8,888,065	9,075,446
Sugarcane . . . . .	13,299,297	13,176,765
Indigo . . . . .	1,781,586	1,192,313
Mimosa (2) . . . . .	1,312,397	1,215,105
Hemp . . . . .	78,474	78,937
Ginseng . . . . .	845,655	653,294
Other Plants . . . . .	16,069,499	16,159,985
Total . . . . .	71,676,268	71,520,583

N. B. The figures in this table refer only to the production in the island of Honshu, Shikoku and Kiushiu, and not to Yezo, Formosa, Corea and the South of Saghalien.

#### § 5. INDUSTRIES CONNECTED WITH THE VARIOUS KINDS OF LIVESTOCK IMPROVEMENT.

With regard to the improvement of horned cattle and horses, etc., we refer our reader to the full particulars we have already published (3). We shall therefore limit ourselves here to reproducing some general data giving fuller details with respect to matters not dealt with in the article referred to.

According to statistics published by the Department of Agriculture, amount of meat and milk produced in the three years, 1908-1909-1910, is as follows :

Year	Milk Produced lbs.	Meat			
		Beef	Horse Meat	Pork	Mutton and Goat Meat
1908 . . . . .	376,992	143,529	56,652	197,786	6,836
1909 . . . . .	424,091	178,575	45,521	161,035	6,891
1910 . . . . .	460,012	261,126	56,274	177,010	7,881

(1) A special kind of mulberry used for making paper.

(2) A species of hemp used in the manufacture of a special kind of paper.

(3) See the Number of the *Bulletin of Economic and Social Intelligence* for January, 1913.



Together with livestock improvement, the dairy industry has developed. The number of farmers who engage in it independently is relatively small, for the most part the small farmers unite to found co-operative dairies the number and work of which tends to increase rapidly enough we see from the following statistics :

Year	Number of Dairies	Number of Head of Cattle	Yield of Milk (Hectolitres)	Amount Produced (tons)	Average Amount per Dai (tons)
1908 . . . . .	4,627	33,153	376,992	6,232,281	1.2
1909 . . . . .	5,128	47,714	424,091	6,985,329	1.3
1910 . . . . .	5,597	52,385	460,012	7,136,298	1.4

Pig improvement does not tend to spread, especially on account of comparatively limited consumption of the produce. Some increase, on the other hand, has been observed in the case of sheep and goat improvement, on account of the continually growing use of goats' hair and m

With regard to the secondary produce from livestock improvement may be observed that, except for preserved beef, the quantity is almost negligible, as the consumption of such produce in the country is very small. This is seen from the following data for the year 1910 :

Products	Number of Factories	Production (kgs.)	Amount (tons)
Condensed Milk . . . . .	22	501,468	190.046
Butter . . . . .	48	155,845	187.694
Cheese . . . . .	2	6,881	5.176
Salt Meat . . . . .	24	361,205	156.794
Bacon . . . . .	15	64,337	17.598
Preserved Beef . . . . .	59	1,812,086	1,046.691
» Horse Meat . . . . .	1	180	.36
» Rabbit . . . . .	1	153	.60
» Pork . . . . .	4	1,260	5.483
Total . . . . .	176	—	1,569.544

Poultry improvement, on the other hand, is of far greater importance. consumption of eggs in Japan is increasing very rapidly, and, although widespread, also the consumption of poultry. According to the statistics for 1911 more than 3,000,000 farmers' households (that is about half total number in Japan) were occupied in the improvement of fowls. % of these families had only 10 head of poultry, while 3 % had more than 50. The average per family is 4 head of full grown poultry and 27 hens of a total value of 2.87 yen (7.40 frs.). The average number of eggs produced is 273 per farmer's household, with a value calculated at 5 yens (13.30 frs.).

From the data we reproduce below, the progress made in poultry improvement in Japan in the four years, 1908-09-10-11 may be seen.

Year	Number of Families engaged in Poultry Improvement	Head of Poultry			Eggs Produced	
		Full Grown	Chickens	Total Value (yens)	Number	Amount (yens)
1908	3,036,273	11,068,621	7,599,285	8,208,886	753,576,245	14,297,866
1909	2,925,484	11,741,674	7,608,161	8,134,248	766,900,899	14,376,124
1910	2,971,489	12,213,614	8,198,643	8,324,721	808,909,511	15,107,593
1911	2,996,144	12,503,196	8,145,412	8,597,767	820,580,775	15,432,882

Much less flourishing is the condition of turkey improvement, which, according to the statistics for 1910, was carried on only by about 40,000 farmers' families, owning a total of 192,000 full grown turkeys and 2,000 young ones. The profit from the sale of eggs that year was about 4,000 yens (490,200 frs.).

#### § 6. VARIOUS MANUFACTURES.

With the continual progress of mechanical industry and manufactures it was natural that the primitive household manufactures should decrease considerably. But, notwithstanding the continual absorption on the part of the large factories, there is a certain number of products still worked on a large scale in the farmers' households: amongst these industries must be mentioned as most important the manufacture of tea and Japanese paper. According to the statistics of 1910, the families engaged in the manufacture of tea were 964,225, producing annually 31,270,030 kgs. of tea valued at 13,590,000 yens (33,062,200 frs.), which is equivalent to an average of 34.43 kgs. of a value of about 14 yens (36.15 frs.) per family.

With regard to the manufacture of Japanese paper, the Report of the Department of Agriculture observes that, although in the years 1900-1911 the number of families concerned in this industry has decreased by about 13,000, in the total production there was a considerable increase. It indicates a marked tendency among the Japanese farmers' households to exercise this auxiliary industry on a larger scale; or, when this is impossible to abandon it altogether. We have already met with a similar state of things, though less marked, in the case of other auxiliary industries, especially in that of poultry improvement. The statistics in relation to manufacture of Japanese paper in 1910 were as follows:

Number of Families engaged in the Industry . . . . .	34,900
Total Production . . . . . yens	19,780,000
Average Production per Family . . . . . yens	360

Among the auxiliary industries of minor importance we shall not again the manufacture of mats of various quality (*tatami*, *goza*, *hanag za*, etc.); weaving of straw for hats (of which the export amounted to 9,095,512 yens in 1910), and the treatment of bamboo. We give below a few important figures relating to these industries.

Industry	Number of Families Engaged	Amount of Products (yens)	Average Product per Family (yens)
Manufacture of Mats . . . . .	112,343	10,099,352	90
Weaving of Straw for Hats . . . . .	95,957	15,673,411	163.34
Treatment of Bamboo . . . . .	—	1,905,400	—

In addition to the industries of which we have spoken so far, account must also be taken of that of embroidery carried on on a large scale in recent years, the work being largely exported to Europe and America. In 1910 the total proceeds from this industry amounted to 2,660,000 yen (6,862,800 frs.).

## § 7. FORESTRY INDUSTRIES AND INDUSTRIES DEPENDENT ON FISHING.

Among the industries dependent on forestry the most important is that of charcoal burning. All the country people to whom it is open devote themselves to this industry with excellent results. In 1910, the amount of charcoal produced was 1,128,040 tons, valued at 18 million yen (46,220,000 frs.). The other forestry industries that may be classed as auxiliary

tion them here, with the exception of the gathering of *shiitake* (cor-  
rals *shiitake*), a kind of fungus found in abundance in the Japanese  
islands, especially in the provinces of Shizuoka, Oita, Kagoshima and  
Suzaki, and largely exported. In 1911 the crop was 1,202,000 kgs,  
and at about 1,500,000 yens (3,870,000 fr.).

With regard to industries in connection with fishing, we may say that,  
view of the special geographical conditions of the Japanese Empire,  
they are extremely widespread. The most recent statistics show that the  
number of families engaged in fishing or kindred industries in 1910 amounted  
529,700, of which, however, 230,310 carried on fishing as their principal  
industry. Consequently for 57 % of the families engaged in fishing, this  
is an auxiliary occupation, and, in the great majority of cases, it is auxil-  
iary to agriculture. The Ministerial Report, however, gives no data as  
to the produce and profits of this industry.

## SWITZERLAND.

### THE RE-STRIPING OF HOLDINGS: ITS PRESENT STATE AND PRACTICAL RESULTS.

by M. DISERREUS, Head of the Department of Land Improvement in the Canton of Vaud

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## INTRODUCTION.

The study of modern agriculture demonstrates that the factors which have most largely influenced the produce of industries connected with agriculture and which have undergone fewest modifications are the form and the form of landed property since the development of rapid means of communication.

It must be acknowledged that public authorities have had many problems to solve before they could by any possibility remedy the inconveniences arising from minute sub-division of land and from the want of easy means of communication. Few operations have called forth so much opposition from those who were the first to benefit by them, as re-striping, that is, the re-adjustment of scattered holdings. The reasons for this opposition, manifested almost invariably when it is necessary to carry out such proceedings, are the measures, usually fiscal, required for the protection and guarantee of landed property, and the attachment of the proprietor to the soil which he cultivates.

The experiments in re-striping made in some cantons have shown clearly the influence on the produce of the land and more especially on its rent-paying capacity. The necessity of obviating the inconvenience of a minute sub-division of land, and the absence of easy means of communication together with the increased cost of labour make desirable new legislative measures applicable for the whole of Switzerland. Accordingly the new provisions of the Swiss Civil Code, fixing once for all the principle of the necessity for the minority to conform to the decision of the majority was well received by all parties concerned. The

economic future of our country depends chiefly on the manner in which these provisions are applied in the different cantons.

The importance and necessity of land improvement became apparent when other factors had caused changes in the fertilisation of the soil and in the organisation of agricultural undertakings. Among these may be mentioned the introduction of the cultivation of plants for food considered with reason as an improvement because of their capacity enriching the soil with nitrogen, and the use of agricultural machines but more especially the application of the fundamental principle of agricultural chemistry, that is, the restitution to the soil of the mineral constituents of plants, by the employment of chemical manures.

The selection of the plants to be cultivated and the improvement of breeds of animals have also largely contributed to the increase of the produce of the land. By a process of reaction, the fertilized soil and improved species of plants and animals have caused a change in agricultural implements and machines. One of the chief causes of the continually increasing employment of agricultural machines is the scarcity of labour and its continually increasing cost in the country.

Within the limits of this article we shall not attempt to describe the development of land improvement in Switzerland and its influence on the increase of agricultural production, nor yet the origin of the system of land tenure. We shall only consider the sub-division of land, the advantages attained by the re-striping already accomplished, and the results which an extensive application of such re-striping might produce.

#### § 1. SUB-DIVISION OF LAND IN SWITZERLAND.

We shall avail ourselves in this chapter of the returns of the federal census, agricultural, industrial and commercial, of 5th August 1905 published by the Bureau for Statistics of the federal Department of the Interior.

To give a better idea of the extent of cultivable lands, these have been divided into six classes according to their productive area (meadows, natural and artificial, pasturage, fields, gardens, vineyards, forest, marsh lands). This classification according to size is as follows:

1.	—	From 0.5 to 3 hectares	... minute
2.	—	" 3.1 " 10 "	... small
3.	—	" 10.1 " 15 "	... medium
4.	—	" 15.1 " 30 "	... above medium
5.	—	" 30.1 " 70 "	... large
6.	—	above 70 hectares	... very large

The results of this census (August 5th, 1905) may thus be summarised: 252,496 agricultural holdings of a productive area of 2,088,377 ha.

is employing 763,915 persons, with an average of three persons to each holding, and to 827 hectares of cultivated area.

The total agricultural area divided according to the conditions of tenancy is as follows :

d — free property . . . . .	1,599,573	hectares or	76.59 %
— held on lease . . . . .	414,082	„ „	19.83 %
— worked by usufructuaries . . . . .	74,722	„ „	3.58 %

Thus we see that more than  $\frac{3}{4}$  of the total surface is free property, that even  $\frac{1}{5}$  is held on lease, and that the land worked by usufructuaries but 3.58 % of the whole.

When we consider all the holdings, free, leased or worked by those enjoying the use of them, according to their size, we find the largest number of free proprietors have small farms. The proportion of small farms (1 to 10 hectares) so held is 84.46 % : that of average sized farms so held (11 to 15 hectares) is 82.44 % ; that of very small farms (0.5 to 3 hectares) is 78.22 % that of farms above the average size (15.1 to 30 hectares), 94 % ; that of very large farms of more than 70 hectares, 69.74 % ; and lastly that of the large farms (30.1 to 70 hectares) 66.24 %.

This large proportion of small properties has been a benefit, and will always remain our best social safeguard. But we must endeavour to neutralize the evil effects of a too minute sub-division, in the interest of the small holdings themselves, and try to increase their rental capacity.

The amount of land devoted to the various crops may be computed as follows :

	Hectares	% of total surface
Meadows natural and artificial . . . . .	866,500	41.5
Pasturage . . . . .	687,540	32.9
Fields . . . . .	244,731	11.7
Gardens . . . . .	10,449	0.5
Vineyards . . . . .	24,794	1.2
Forests . . . . .	200,934	9.6
Marshland . . . . .	53,429	2.6
Total . . . . .	2,088,377	100.

As this table shows, meadows and pasturage together cover almost  $\frac{1}{2}$  of the total productive agricultural surface, or 74.4 % whilst fields occupy but little space, and vineyards only a small fraction. Forests are treated in the survey as agricultural land when forming an integral part of a holding.



It is interesting to compare this table of the distribution of land according to its various crops with a similar one drawn up in 1798 in the direction of the Helvetian Directory.

Land	Area in arpents	Value in livres Swiss	Value per arpent
Vineyards . . . . .	50,000	100,000,000	2,000
Fields . . . . .	1,700,000	600,000,000	353
Meadows . . . . .	900,000	840,000,000	934
Marsh land . . . . .	1,000,000	100,000,000	100
Orchards . . . . .	50,000	80,000,000	1,600
Gardens . . . . .	20,000	40,000,000	2,000
Woods . . . . .	1,500,000	320,000,000	213
	5,220,000	2,080,000,000	—

Pasturage for 300,000 head of horned cattle.

The arpent is equivalent to 3,240.5 metres, and a Swiss livre to 12 francs. The marsh lands are seen to be considerable, having an area of 324,050 hectares, equal to that of the whole Canton of Vaud. The following tables will show the parcelling out of the land according to the various regions and cantons. The total agricultural and productive surface of Switzerland, 2,088,377 hectares in extent is divided into 3,479,207 parcels. Each farm contains an average of 14.3 parcels, of an average area of 143 hectares. The Alpine pasturage farms which are often of considerable extent and which generally consist of but one parcel, are considered as agricultural farms properly so called: those with an area of less than a hectare were not taken into consideration in the survey. It follows that the actual areas of the very small portions are not perfectly in accordance with the figures given in the tables.

Number and total area of holdings according to size.

Class according to size	No. of farms	Total area	No. of parcels	Average number of parcels per farm	No. of parcels to every 100 hectares	Average area of a parcel in hectares
From 0.5 to 3 ha. .	100,390	164,073	1,209,052	12.0	736.9	0.14
"  3.1 " 10 " .	101,529	572,636	1,666,910	16.4	291.1	0.34
"  10.1 " 15 " .	19,763	239,642	323,582	16.4	135.0	0.73
"  15.1 " 30 " .	14,744	297,721	209,845	14.2	70.5	1.41
"  30.1 " 70 " .	4,620	198,712	45,969	9.9	23.1	4.31
Above 70 ha. . . .	2,664	615,593	23,849	8.9	3.9	25.81
Total . . . . .	243,710	2,088,377	3,479,207	14.3	166.6	0.60

These figures show the number of parcels in each farm, and their average area, which varies considerably according to the class. The average number of parcels is 12 for a farm in the first and smallest class (up to 3 hectares). There are 16.4 parcels in the following two classes, then the number falls to 14.2 for the 4th class, 9.9 for the 5th class and to 8.9 for the 6th and last class (above 70 hectares). The larger farms are thus very less sub-divided than the smaller. In the very small farms the average area of a parcel is 14 ares; in the five following classes it is respectively 34 ares, 75 ares, 1.4 hectare, 4.3 hectares and 25.8 hectares. The larger area of the parcel in the farms of more than 70 hectares is explained by their being to a considerable degree Alpine pasture. The following table shows the average number of parcels in each farm and the average area of each parcel:

## Number and area of parcels in each canton.

Cantons	No. of farms	Total area in hectares	No. of Parcels	Average No. of Parcels per Farm	No. of Parcels to every hundred hectares	Average area of the parcels
Zürich . . . . .	21,201	120,820	315,346	14.9	261.0	0.1
Bern . . . . .	43,764	442,479	378,086	18.6	85.4	1.1
Lucerne . . . . .	10,571	115,897	57,370	5.4	49.5	2.1
Uri . . . . .	1,824	36,571	5,060	2.8	13.8	7.1
Schwyz . . . . .	4,269	48,049	15,985	3.7	33.3	3.1
Oberwalden . . . . .	1,839	25,513	5,786	3.1	22.7	4.1
Unterwalden . . . . .	1,057	18,638	3,763	3.6	20.2	4.1
Glarus . . . . .	1,856	28,095	19,726	10.6	70.2	1.1
Zug . . . . .	1,325	14,796	5,609	4.2	37.9	2.1
Fribourg . . . . .	12,069	117,332	95,343	7.9	81.2	1.1
Soleure . . . . .	8,293	49,838	87,404	10.5	175.4	0.1
Basel (City) . . . . .	189	1,654	3,895	20.6	235.5	0.1
Basel (Country) . . . . .	5,547	27,724	65,921	11.9	237.8	0.1
Schaffhausen . . . . .	4,079	16,756	77,780	19.1	464.2	0.1
Appenzell (R. ext) . . . . .	3,629	18,644	7,047	1.9	37.8	2.1
Appenzell (R. Int.) . . . . .	1,415	11,083	3,528	2.5	31.8	3.1
St. Gall . . . . .	17,027	131,821	104,536	6.1	79.3	1.1
Grisons . . . . .	12,805	248,211	310,863	24.3	125.2	0.1
Aargau . . . . .	20,568	82,515	283,095	13.8	343.1	0.1
Thurgou . . . . .	11,179	66,334	149,683	13.4	225.6	0.1
Ticino . . . . .	15,707	63,910	555,387	35.3	869.0	0.1
Vaud . . . . .	20,051	186,998	283,582	14.1	151.6	0.1
Valais . . . . .	17,437	151,755	587,915	33.7	387.4	0.1
Neuchâtel . . . . .	3,537	45,938	33,845	9.6	73.7	1.1
Geneva . . . . .	2,472	17,006	22,652	9.2	133.2	0.1
Suisse . . . . .	243,710	2,088,377	3,479,207	14.3	166.6	0.1

As regards the average number of parcels under cultivation, Ticino leads at the head with 35.3 parcels, then Valais with 33.7, Grisons with 31.4, Basel (Town) 20.6, Schaffhausen 19.1, Zurich 14.9, Vaud 14.1, Aargau 13.8, Thurgau 13.4, Basel (Country) 11.9, Glarus 10.6, Soleure 10.5, Neuchâtel 9.6, Geneva 9.2, Berne 8.6, Freiburg 7.9, St. Gall 6.1, Lucerne 5.8, Zug 4.2, Schwyz 3.7, Unterwalden 3.6, Oberwalden 3.1, Uri 2.8, Appenzell Int. 2.5, and Appenzell Ext. 1.9.

The average area of these parcels varies considerably in the different cantons: those in Ticino are the smallest being only 12 ares, then come Appenzell Ext., Valais, Aargau, Zurich, Basel (Town), Basel (Country), Thurgau, Soleure, Vaud, Geneva, Grisons with parcels the area of which averages less than one hectare.

For the cantons of Bern, Fribourg, St. Gall, Neuchâtel, Glarus, Lucerne the average area is from one to two hectares; then come the Alpine cantons of Zug, Appenzell Int., Oberwalden, Unterwalden, Uri in which the area of the parcels varies from 2.64 to 7.23 hectares. We shall see that with the exception of St. Gall, the cantons that have carried out the work of re-striping are comprised in the first category in which the holdings average less than one hectare.

The sub-division of holdings according to parcels is as follows:

held by one tenant.	23,435	holdings, equal to	9.6 %
comprising 2 parcels	19,968	" "	8.2 %
" 3-5 "	50,947	" "	21.0 %
" 6-10 "	52,053	" "	21.3 %
" 11-15 "	29,441	" "	12.0 %
" 16-20 "	19,299	" "	7.9 %
" 21-25 "	12,873	" "	5.1 %
" 26-50 "	25,629	" "	10.6 %
" 51-100 "	7,850	" "	3.2 %
" 101-150 "	1,310	" "	0.5 %
" more than 150 "	905	" "	0.3 %
Total number of holdings	243,710		100 %

To show the division into parcels in each canton we shall distinguish the following categories of agricultural labour.

working under favourable conditions comprising . . . . .	1-5 parcels	94,350	holdings = 38.8 %
favourable . . . . .	6-10 "	52,053	" = 21.3 %
very unfavourable . . . . .	11-20 "	48,740	" = 20.0 %
impossible . . . . .	more than 20 "	48,567	" = 19.9 %
Total . . . . .	243,710		= 100 %

The arrangement of the cantons according to the above classes is given in the following table:

Cantons	Total number of farms	1-5 parcels conditions favorable		6-10 parcels conditions unfavorable		11-20 parcels conditions very unfavorable		Above 21 parcels conditions impossible	
		Total	%	Total	%	Total	%	Total	%
Zürich . . . . .	21,201	5,529	26.0	4,938	23.3	5,316	25.0	5,418	25
Bern . . . . .	43,764	22,677	51.8	10,189	23.3	6,760	15.4	4,138	9
Lucerne . . . . .	10,571	7,077	67.0	1,988	18.8	1,253	11.9	253	2
Uri . . . . .	1,824	1,703	93.4	105	5.7	9	0.5	7	0
Schwyz . . . . .	4,269	3,493	81.8	583	13.6	157	3.7	36	0
Oberwalden . . . . .	1,839	1,623	88.3	196	10.7	17	0.9	3	0
Unterwalden . . . . .	1,857	902	48.5	98	9.2	41	3.8	16	1
Glarus . . . . .	1,856	852	45.9	484	26.1	291	15.6	229	12
Zug . . . . .	1,325	1,009	76.2	257	19.4	53	4.0	6	0
Fribourg . . . . .	12,069	6,818	56.5	2,708	22.4	1,554	12.9	689	5
Solothurn . . . . .	8,293	2,731	32.9	2,475	29.9	2,128	25.6	939	11
Basel (City) . . . . .	189	46	24.3	25	13.2	44	23.3	74	39
Basel (Country) . . . . .	5,547	1,866	33.6	1,585	28.5	1,221	22.0	875	15
Schaffhausen . . . . .	4,079	417	10.2	776	19.0	1,452	35.6	1,434	35
Appenzell (R. Ext.). . . . .	3,629	3,511	96.7	167	2.9	11	0.4	—	—
Appenzell (R. Int.). . . . .	1,415	1,321	93.4	84	5.9	9	0.6	1	0
St. Gall . . . . .	17,027	10,055	59.0	4,200	24.6	2,291	13.4	480	3
Grisons . . . . .	12,805	2,206	17.2	2,288	17.9	3,294	25.7	5,017	39
Aargau . . . . .	20,568	4,919	23.9	5,449	26.5	5,940	28.8	4,260	20
Thurgau . . . . .	11,179	2,693	24.0	2,974	26.6	3,336	29.8	2,776	19
Ticino . . . . .	15,707	2,781	17.7	2,621	16.7	3,182	20.2	7,123	45
Vaud . . . . .	20,051	5,533	27.6	4,689	23.4	5,586	27.8	4,243	21
Valais . . . . .	17,437	1,809	10.4	1,832	10.5	3,613	20.7	10,183	58
Neuchâtel . . . . .	3,537	1,716	48.5	701	19.8	690	19.5	430	12
Geneva . . . . .	2,472	1,063	43.0	701	28.3	492	19.9	216	8
Total . . . . .	243,710	94,350	38.8	52,053	21.3	48,740	20.0	48,567	19

The small cantons, Uri, Schwyz, Unterwalden, Zug and Appenzel, have three-fourths of their holdings in the first class; Bern, Lucerne, Fribourg, St. Gall, Neuchâtel and Geneva have in the first class a proportion higher than the average for all Switzerland. For the cantons of Aargau, and Vaud the figures in the four classes are nearly the same. The labour conditions of Valais are the most unfavourable; 44 % of its holdings belong to the fourth class; Ticino follows with 44 %.

Setting aside the Alpine cantons, the surface of which covers only 10 % of the productive soil of Switzerland, the conditions of sub-division are unfavourable in 18 cantons, very unfavourable in 13; and finally the fourth class is represented as follows in the following cantons, the figures showing the proportion of holdings comprising more than 20 parcels each; Zürich 25.6 %, Basel (Town) 39.2 %, Schaffhausen 35.2 %, Fribourg 39.2 %, Aargau 20.8 %, Thurgau 19.6 %, Ticino 45.4 %, Vaud 42.2 %, and Valais 58.4 %.

We believe we have shown that the great majority of agricultural holdings in Switzerland labour under many disadvantages because of the excessive division of the land, the irregular forms of the parcels which are very inconvenient for cultivation, the difficulty of access to certain parcels, and the absence of bye-roads. This state of affairs, and the cost and scarcity of labour are detrimental to the future of agriculture. When more regular sub-division shall render labour easier and more remunerative we shall not be far from a return to the land, or at least we shall approach an equilibrium between industry and agriculture with regard to the quality and the cost of labour.

## § 2. THE UNDERTAKINGS CARRIED OUT IN SWITZERLAND AND THE RESULTS OBTAINED.

Long before the establishment of federal legislation intended for the improvement of agriculture several cantons, aware of the inconvenience of the division and dispersion of landed property had put in force legislative provisions.

Of these the first of which we have any knowledge emanated from the Government of Bern. The order of March 10th., 1591, confirmed by common law of 1616, applicable to the Pays de Vaud, authorised, at first for six years, then more generally, the enclosing of private landed property through payment to the Commune of the sixth part of its value.

Bernese regulation of 1717 established for the canton the principle of compulsory enclosure of land, suspending for two years the right of making exchanges.

The canton of Lucerne in 1808, and again in 1837 issued laws intended to encourage the union of small holdings, but they remained a dead letter because no provision had been made for opposition on the part of the minority.

The first law making the grouping of lands compulsory in certain special cases was promulgated by the canton of Ticino in 1852. The law granted to a proprietor the right of obliging his neighbours to sell him or to exchange small plots of less than 300 square metres adjacent to his own property. The neighbouring proprietor might require exchange a plot superior by one-fifth to the value or area of the plot given up by him. This law had no effect on sub-division, and was substituted by the law of 1902 still in force.

*Aargau.* — The establishment of the cadastre was the chief reason for re-stripping which it was hoped would favour the improvement of agriculture. The regulation of rivers, drainage works, farm roads and especially of farm re-adjustment or re-stripping had to precede the organisation of the cadastre.

Re-stripping was carried out in accordance with the Rural Code December 24th., 1875, of which the following are the chief provisions:

1. — Rural Commissions of from five to nine members were appointed to settle all differences arising from the application of the Rural Code.

2. — All parcels of land were to be provided with farm roads within four years.

3. — The re-stripping might be undertaken as soon as two-thirds number of proprietors interested and possessing half of the land declared themselves in favour of it. The State makes grants in case of re-stripping.

From 1875 to 1885, that is, before the federal law of 1884 on the improvement of agriculture by the Confederation, the canton of Aargau readjusted 17 farms covering an area of 656.6 hectares at a cost of frs. 39,569.

Article 89 of the Constitution of Aargau of April 23rd., 1885 says: "The cadastre of the canton must be completed within 25 years. In general the State, will bear one-third of the cost."

The article above quoted, and the Rural Code of 1875 and the federal law of 1884 gave a considerable impulse to the work of re-adjustment and re-stripping carried out simultaneously with the establishment of the cadastre.

From 1872 to the end of 1910 this canton completed 86 undertakings of the kind on an area of 3,944.2 hectares, at a cost of fr. 2,146,823, the fr. 535 per hectare. In nine cases drainage works were carried out, the cost is included in the above total. The area re-stripped is only 4% of the total area of the agricultural holdings of the canton, that is 82 hectares. Small as this proportion is, it may be affirmed that the establishment of the cadastre in Aargau has been a great help to agriculture. The advantage to the Treasury is a secondary consideration.

The following figures show the importance of the works carried out in connection with the division of land:

Length of roads . . . . .	214.65	kilomètres
" " canals . . . . .	21.403	"
" conduits . . . . .	9.09	"

The number of parcels, formerly 13,933, was reduced to 10,278 that by 26 %.

In the greater number of these undertakings it has been necessary to lay a network of farm roads, then to rectify and re-divide irregularly shaped parcels while reducing their number. Thus at Lupfig, in 1878, the number of parcels was reduced from 168 to 140 in an area of 38.2 hectares. Later, in the two undertakings at Fislisbach completed in 1905-07, an area of 354 hectares the parcels were grouped far more closely together, the value of this land was calculated to be fr. 1,151,746, that is an average fr. 3,255 per hectare. The 317 proprietors concerned owned 1,912 parcels of ground, a number reduced after the re-striping to 857, a percentage 66.2 %. The whole work, including 32.012 kilometres of roads cost 118,648 or an average of fr. 335 per hectare. It was estimated that the value of the re-striped land in some cases rose at least 20 %.

Out of a total of 20,568 agricultural holdings, Aargau has 10,200, that 49.6 % of more than ten parcels each, and in this number are comprised 1,100 holdings of more than 50 each. The work is still far from complete though much has already been accomplished.

M. Basler calculated in 1902 that the farms for which re-striping was dispensable covered an area of 40,000 hectares and were divided into 200,000 parcels. The schemes now being carried out give hopes that these measures will soon be extended to a very considerable area.

*St. Gall.* This canton has always had to contend against the danger inundations of the Rhine and the overflow of mountain torrents when they reach the plains. The cost of works of embankment and regulation of the Rhine, the construction of canals in the interior, the regulation and bankment of rivers of secondary importance, between 1832 and 1905 amounted to 40 million francs, of which 35 millions were spent on the plain of the Rhine. To enable the proprietors concerned to contribute to the expenses of these undertakings, it was necessary to render their land capable of ensuring a return in proportion to the probable expenses incurred. The logical continuation of the work of rendering the soil productive and fit to cultivate led to draining and re-striping at Wardenberg, Grabs and Gams, which are and will remain examples of what can be done in this respect in Switzerland.

Re-striping was carried out in accordance with a law of February 18th, 1866 on exchange of land in connection with the rectifying of water-courses.

Its provisions were extended to the whole country by the law of December 30th, 1889. To organise an undertaking it is necessary to obtain the consent of a majority of proprietors possessing more than half the value of the land in question.

In 1885, when the federal law of 1884 for the improvement of agriculture came into force, of the 8 undertakings to which federal subsidies were granted, the two first were for re-striping in the canton of St. Gall, over a total area of 457 hectares, the first at Wardenberg for 317.2 hectares belong-



ing to 570 proprietors, the other at Ragazz for 144 hectares belonging to 198 proprietors.

The estimated cost for the work was respectively fr. 37,000 and fr. 17,200. The St. Gall law of May 22nd., 1885 granted subsidies of 3% of the cost of land improvements. At the end of 1899, there were 1,156 hectares of land re-stripped and the cost of the works in connection therewith rose to fr. 165,000 or fr. 214.20 per hectare. M. Schüller, rural engineer for the canton of St. Gall, prepared at the same time a programme of improvements necessary to render the soil of the plains fit for cultivation and easily worked. The scheme contemplated the following:

1. Regulation and lowering of the vaulting of underground channels.
2. Construction of canals to receive drainage-water.
3. Construction of a net-work of farm roads in connection with the high-roads and regulated water-courses.
4. Simultaneous re-stripping of the land in question.

The estimate of the cost of such works in an area of 7,800 hectares was calculated at fr. 780,000 or an average of fr. 1,000 per hectare.

We must, however, subtract from the proposed area 1,156 hectares on which 8 undertakings were carried out from 1899 to 1907. The total area re-stripped from 1884 to 1907 was 1,926.38 hectares, and the total cost of the works in connection therewith amounted to fr. 827,114 or an average of fr. 430 per hectare. The number of proprietors concerned was 26 that of the former parcels 7,179 reduced now to 3,226. The actual number of parcels divided by the maximum number gives 85.6%

$$\frac{7,179 - 3,286}{7,179 - 2,633} = 85.6 \%$$

This is a high figure, not likely to be surpassed in other similar undertakings. The estimated cost is fr. 6,080,000, or an average of fr. 780 per hectare.

The importance of these works is shown in the total length of the works constructed, namely 128.6 km. at a cost of fr. 235,577 and of the total area 39.93 km. costing fr. 234,561.

Let us take as an example the works at Grabs and Gams in connection with the rectification of their chief water courses, for which subsidies were granted dependent on the drainage of the adjacent lands and re-stripping. The total area in question consisted of 649 hectares, and the cost was fr. 407,021 or an average of fr. 626 per hectare. The following figures show the degree in which the parcels were united:

$$\frac{1659 - 748}{1659 - 610} = 87\%$$

The position of the Canton of St. Gall with regard to the subdivision of land is good. Of 17,027 farms there are 10,053, or 59% in the first class of from 1 to 5 parcels and in the 2nd. class 42%, and there are 2 estates with more than ten parcels. The result shows that the re-stripping with closer grouping adapted to local conditions has caused all the inconveniences due to sub-division and dispersion of parcels to disappear.

The following table shows the increase in value of the improved lands:

1. Re-striping at Werdenberg

Valuation in 1884 . . . . .	fr.	421,000
Estimated value of land 1894 . . . . .	"	746,000
Increase in value 77 % . . . . .	"	325,000

2. Re-striping in Grabs

Valuation in 1900 . . . . .	fr.	1,000,000
Estimated value of land in 1910 . . . . .	"	1,650,000
Increase in value 65 % . . . . .	"	650,000

3. Re-striping in Simmi

Valuation in 1900 . . . . .	fr.	1,100,000
Estimated value in 1910 . . . . .	"	1,760,000
Increase in value 60 % . . . . .	"	660,000

These increased values are a proof of national prosperity. M. Schüller shows that in three classes of farms in the plains of the Rhine, of the Rhodanese, and of the Seez, costing fr. 1,315,000 the increase in the value of the land was fr. 3,360,000. The grants made by the Canton of St. Gall from 1850 to 1909 for the above-mentioned works amounted to fr. 372,750, a somewhat high figure compared with the results obtained.

These undertakings, dependent principally on rural engineering have shown the best course to follow for the cultivation of unfavourably situated lands and proved that the subsidies granted by the State and the Confederation for such works form the safest and one of the most remunerative investment.

*Basel (Country).*— After the results obtained in the cantons of Aargau and St. Gall, and the renewed encouragement given by the federal law of September 22nd., 1893 for the improvement of agriculture by the Confederation, it was to be expected that in all the cantons laws would be made to facilitate the working of the land.

The canton of Basel (Country) on September 2nd., 1895 passed a law for the making of farm roads in connection with re-striping. A majority of the persons interested, possessing at least half the landed property is competent to decide in favour of such an undertaking. The re-striping or adjustment of farms naturally followed the construction of roads.

Before the law came into force seven projects had been voluntarily promoted.

In the commune of Allschwil near Basel, thirteen projects were carried out on a total area of 655 hectares between the years 1893 and 1899; in the commune of Ettingen three have been carried out since 1899 and an area of 181 hectares re-striped. From 1893 to the end of 1904, 33 projects have been carried out on an area of 977 hectares, at a cost of fr. 294,732, or an average of fr. 294 per hectare. The number of parcels was 6,156 be-

fore the re-stripping and is now 4,110, showing a reduction of 33 %. Since 1905 four new projects have been carried out on an area of 370 hectares.

It may be foreseen that this canton, still over divided, as 33.8 % of its agricultural holdings appear in the first class, will labour with still greater zeal for the accomplishment of the work begun.

*Neuchâtel.* — The Rural Code of May 15th., 1899 devotes an important chapter to re-stripping, and in the opinion of legislators a change of this kind should contribute at least as much as drainage to the improvement of agriculture. The summary of the subjects under consideration in January 1905 says " It is more and more recognised by the most enlightened agriculturists of our canton that the indefinite sub-division of agricultural property and the separation of the parcels composing our rural holding constitute one of the most serious obstacles to the economical cultivation of the soil, and the greatest difficulty in the way of the use of machines.

It is established by the Code that when two-thirds of the proprietors representing two-thirds of the land pronounce in favour of a scheme of re-stripping, and obtain the authorisation of the Council of State, it may be carried out.

The necessity of a majority of two-thirds of the number of proprietors and the same proportion of land is one of the reasons why these provisions were not always carried into effect. In fact, the single scheme of re-stripping carried out at Savagnier in 1907 on an area of 26 hectares was unanimously approved by the 36 proprietors concerned.

The canton of Neuchâtel was one of the pioneers in drainage in Switzerland, and at the end of 1911 it has drained 4,554 hectares at a cost of fr. 2,500,000, a work which has given agricultural prosperity to several valleys previously almost deserted. Re-stripping is everywhere recognised as necessary, and it may be combined with the revision of the land register.

*Ticino.* — The first law of 1852 has not been carried into effect. A new law of the May 28th., 1902, on " The re-stripping and re-adjustment of landed property " decrees that as soon as an undertaking is planned with the consent of a majority of the proprietors, concerned, or in default of this a number of proprietors who represent half the land to be re-striped will be sufficient to compel the opposition to associate in the work. Re-stripping may even be officially ordered by the Council of State in the case of a commune or region of 10 hectares when the average extent of the parcels in such commune or zone is less than 500 square metres.

Besides a grant of 25 %, the State gives a premium of from 200 to 2,000 francs for the first farms on which the work is completed. On May 14th., 1908 re-stripping was for the first time declared compulsory by the Council of State in the territories of six communes. In one of these a proprietor owned from 100 to 300 parcels of ground averaging an extent of 80 square metres. Up to the present no work has been carried out. The re-stripping of a seventh commune has been decided on. Since 1908 the cantonal grant has risen to 30 %.

The establishment of a cadastre is one of the most important tasks awaiting Ticino. This canton is carrying on many works for the red-

tion of rivers and the present is a good opportunity for improving the soil making its cultivation economical and prosperous.

It is to be desired that the law of 1902 should be generally applied.

*Fribourg.* — Two cantons have simultaneously discussed and passed laws on this subject; Fribourg on May 17th., 1907 and Vaud on May 14th., 1907.

In Fribourg the law declares that a project of re-stripping is to be carried out if supported by a majority of proprietors holding at least half the land. If it is opposed by a majority, the minority may have recourse to the Council of State, which may declare the project compulsory. This law goes further than those of St. Gall and Basel (Country) and is similar to that of Ticino.

Up to the present time two schemes in relation to a total area of 247 hectares have been carried out at a cost of 212,000 francs.

The works accomplished since 1906 at Praz-Melley comprise the regulation of a stream, drainage, construction of roads and re-stripping on an area of 102 hectares. The cost was 132,763 francs, that is 1,300 francs per hectare.

The canton of Fribourg every year completes considerable drainage works, and will before long effect further re-stripping. In fact the soil is largely sub-divided; 12,067 agricultural holdings consist of 94,209 parcels, and two districts average 15 and 16 parcels to each holding.

*Vaud.* — This canton was probably the first to adopt at an early period of its existence the principle of compulsion for the minority. The law of June 12th., 1805 on the abolition of commonage declares that "repurchase is compulsory for all as soon as there is a majority of persons concerned in its favour. The acts of the delegate of the proprietors are binding on all."

The Rural Code of 1848 contained the following provision; "The drainage of marshes may, if essential to public utility, be effected even against the will of the proprietor. Special decrees will determine the method in each case."

The law of Vaud of 1907, originally proposed by M. Martinet, authorizes the carrying into effect of projects approved by two-thirds of the number of proprietors owning at least half the land, or by a majority owning at least two-thirds of the land. When the Council of State has ascertained that the projected improvement will be for the advantage of all, and likely to increase the rental capacity of the land it issues a decree compelling the assent of the minority.

Re-stripping was begun on the occasion of the revision of the land register in a certain number of communes, and of the creation in 1909 of a Cantonal Department of Land Improvement.

The following table shows the projects now quite or nearly completed:

Summary of re-striping operations in the Canton of Vaud from 1909 to 1912.

Year	Commune	Area in hectares	Total cost of under-taking	Cost per hectare	Farm Re-adjustment						Roads			Works of reclamation drainage and irrigation		
					Value of lands	Parcels	Cost of Re-stip-ling	Length in metres	Total Cost	Cost per hectare	Length of Canals in metres	Total Cost	Cost per hectare			
1909	St. Clerget	40	44,132.85	1,100	139,315.24	149	66	5,533.55	138	3,400	15,867.45	396	16,508.66	22,752.03	568	
1909	Bredigny	44	40,369.30	915	144,092.81	68	54	4,077.05	115	3,960	12,026.92	275	20,300	23,261.62	528	
1910	Apples	18.8	15,694.10	834	89,407	34	24	865.23	45	650	1,770.27	94	6,230.00	13,060.57	694	
1911	Corbeyrier	59.4	29,500	1,000	91,684	287	95	3,800	129	4,215	18,000	612	2,400	7,700	262	
1911	Tracy I	70.3	65,607.05	935	149,411.65	146	84	4,000	57	6,100	20,222.5	290	37,000	41,476.55	590	
1912	Vilachaux	32	35,000	1,090	85,494.70	165	49	4,000	144	4,530	12,400	387	21,950	18,000	562	
1912	Tracy II	66.6	38,608.75	880	109,126.94	186	94	4,000	60	6,300	16,833.9	215	23,851.30	37,774.80	566	
		301.1	288,902.25	965	897,435.34	1,028	466	27,774.55	98	26,964	97,119.04	330	127,402.66	164,008.50	538	

Average grouping of parcels:

1908 2,465  
1909 2,008  
1910 2,004

— 77 %

Average groupings of parcels: 1000 = 400 — 77 %  
1000 = 400 — 77 %

The example has been set and many works are in progress. The re-striping will precede or accompany the revision of the land register, for the Council of State will in future consider such revision as complementary to re-striping and land improvement in general.

Land adjoining habitations and groups of buildings in towns, and in general all building ground is excluded from the re-striping to which agricultural land is subject. The Vaudois law of August 28th., 1912 is applicable to building ground and provides for simple rectification of boundaries well as for re-striping in the immediate neighbourhood of towns. The requisite majority and forms of procedure are analogous to those prescribed by the law of 1907.

A new bill inspired by recent experience will complete the law of 1907. This bill extends the rules in connection with re-striping to collective drainage works, and provides that re-striping may be officially ordered by the Council of State and made compulsory for all proprietors concerned in the following cases;

a) — at the time of carrying out rectifications of river courses or extensive drainage works;

b) — at the time of the construction of cantonal or communal roads, of railways involving considerable alterations in farm roads and in the division of land;

c) — on the occasion of a contract for the cadastral survey of communal land in the case of revision of the land register when the whole or a part of the land in question needs improvements in ownership or in means of communication.

These provisions, if adopted entirely will lead to further re-striping in the canton of Vaud. It is, however, to be regretted that the effect of these provisions could not be made retrospective to the date of the first economic and agricultural movement in the country.

*Zürich.* — The cantonal law on the improvement of agriculture, passed September 24th., 1911, has been in force since the January 1st., 1912. It contains very important provisions on re-striping. In the case of proposals for the purpose a rough draft is presented in a general meeting of the proprietors concerned, a majority of whom representing more than half the land may reject or accept the scheme.

Before this law came into force a scheme of improvements was drawn up at Opfikon-Oerlikon to affect an area of 160 hectares. Works of drainage, canal making, irrigation and re-striping, estimated at fr. 351,000 of which sum fr. 96,000 were spent on re-striping were carried out between 1909 and 1912. The number of parcels had previously been 430, belonging to 148 proprietors, while at present there are only 204 parcels, a group of 80 %. The number of plans for re-division proves that the law above mentioned will be frequently put in force to check the too minute division of land prevailing in this canton.

## § 3. THE PRACTICAL IMPORTANCE OF RE-STRIPING IN SWITZERLAND.

I. *The Civil Code and the cantonal laws.*

In every part of Switzerland opinions have been energetically expressed against the too great sub-division of land from which we are suffering more and more. The merit of having succeeded in introducing into the federal legislation provisions intended to facilitate re-striping is due to the committee of the Swiss Peasants' Union. The conference of Swiss rural engineers interposed in 1905 in favour of maintaining the new provision which had been set aside by the federal commission of experts. The essential provision introduced into article 703 of the Civil Code practically cuts short all discussion. It did not occur to any one to contest the technical utility of re-striping, but it was objected that such a measure would be illegal, and would be an attack on the rights of property. Some writers even go further than the Civil Code, and demand a federal law on the subject.

Article 703 of the Civil Code provides for compulsory re-striping when approved by two-thirds of the persons interested, representing more than half the land. The cantons have the power of modifying these conditions and of applying the same rules to building ground. In virtue of this last provision the canton of Vaud has put in force the law of the August 28th., 1912 on the rectification of boundaries and the re-striping of building ground. Other articles of the Civil Code regulate the transfer and the value of land securities. Plans for the improvement of the land, or for the exchange of plots in order to rectify the shape of an agricultural holding are by article 954 exempted from the payment of fees.

Several cantons have added similar provisions to those of the federal Civil Code.

*Bern.* — After the refusal by the people of the law of 1896 on re-striping, this canton waited until the Civil Code had to be applied in order to lay down in its cantonal law that re-striping be proceeded with when a majority of proprietors possessing half the land thus decide. We have not heard of any projects being yet realised.

*Grisons.* — The decree of 1911 declares that re-striping can only be carried out when desired by two-thirds of the proprietors possessing half the land. We know of only one instance of this being put in practice, in which 64.9 % of the holdings contain more than 10 parcels, and of these 1,335 contain more than 50.

*Thurgau.* — Here re-striping is decided on by a simple majority of proprietors of half the land in question. Two plans of re-striping of a total area of 28.7 hectares have already been completed and a third is being carried out at Mulbreim at an estimated cost of 130,000 frs.

*Schaffhausen.* — Here the cantonal law declares that a majority of proprietors is sufficient to authorise the work of re-striping, and the minority may appeal to the Council of State; if its opinion agrees with that of the

minority, the majority must yield. At Schleithem on a tract of 342 hectares of communal land, works have been undertaken, including drainage, construction of a net-work of roads and re-striping. The cost is estimated at fr. 235,000.

*Neuchâtel.* This canton has modified the conditions of the rural Code of 1899. A majority of two-thirds of the proprietors holding half the area under consideration secures the adoption of a scheme of re-striping. For this purpose the Canton has established a department of rural engineering, often employed in drainage works.

*Vaud.* The law of November 19th., 1907 on warping of land may be applied without regard to the previous sub-division. As far as we know, there has not been any collective scheme of warping carried out in the plain of the Rhone. The cantonal law requires that the minority be obliged to conform to the decision of the majority concerned, when the latter are proprietors of half the land in question. This law is necessary, as 79.1 % of the holdings of this canton consist of more than 10 parcels each, and of 3.637 % consist of more than 50 holdings.

*Geneva.* — The law of June 22nd., 1907 on drainage contains rules for organisation of syndicates. The necessary majority is that of two-thirds of the proprietors possessing half the land, or the majority of votes. A bill on re-striping is at present before the Great Council.

## II. Federal law on the subject, and Grants-in-aid.

We have examined as concisely as possible the legislative rules in force in the 26 cantons. If we glance at the map of the sub-division of land in Switzerland, we shall see that all cantons of which the land is classed as "unsuitable" for cultivation possess legislation on re-striping and have either carried it out, or are about to do so.

The federal law of December 22nd., 1893, the Civil Code and the various cantonal laws (special laws and additions to the Federal laws) are sufficient, in our opinion, to complete the important task we have pointed out in the preceding sections. Federal legislation on the subject would be superfluous, and might compromise the good results obtained hitherto.

The cantons have the power of amending the decrees of the Civil Code in regard to works of improvement. Several cantons have judged that a simple majority of proprietors of half the land is sufficient to coerce the minority. The economic importance of re-striping justifies such a procedure, which could with advantage be applied more generally. It is necessary that all undertakings be carried out, if not with the collaboration of, by at least the majority of proprietors. To ensure such a majority, farmers must be instructed in the nature and advantage of the work, lectures, publications, visits to works already completed etc.

Re-striping is often combined with other schemes of land improvement with the revision of the land register, the land concerned being frequently comprised within the limits of the regulation of rivers.



The estimated cost of such works is often fr. 1,000 per hectare and sometimes more. It would be impossible for proprietors, even associated without considerable financial assistance, to meet such expense.

Aids granted by the State or the Confederation to agriculture are never more useful than when given to these undertakings, and subsidies of more than half their average cost are justifiable. But the proprietors should share in the outlay, for, as soon as the works are complete they reap the benefit.

To these undertakings the Confederation makes grants generally equivalent to those of the cantons, of which the rate varies from 25 % to 40 % of the cost. Taking into account the diverse interests and financial possibilities, the most equitable rate is fixed at 30 % for the State and Confederation, and 40 % for the communes and corporations. If we add these financial encouragements the organisation of technical bodies for the elaboration of projects and the direction of technical works undertaken we obtain a system capable of quickly overcoming the difficulties of re-striping and utilising all public measures for rendering agriculture at the same time more productive and more remunerative.

### III. *The Economic Value of Re-striping.*

The task of modern legislation is to regulate the application of economic principles in agriculture as in industrial affairs, and to contribute to the increase of public wealth by the encouragement of everything conducive to that result.

"Agriculture is undeniably the basis of all economy" says Bluntschli and it is the duty of the State to contribute to its prosperity. This need not be discussed. Of the sum total of the measures taken by the State to encourage and promote agriculture, re-striping and land improvement in general form the point of departure without which other efforts are illusory or do not lead to the results that might be expected from the money and effort expended. It is useless to spend money freely to increase or by suitable manuring, or to sow choice seeds, if the results anticipated are nullified by the inconvenience and needless expense caused by the irregular forms and small dimensions of the parcels.

The increasing use of agricultural machines is due to the great cost and scarcity of labour. But if the parcels are very small, irregular or scattered here and there, and are without serviceable roads, the use of machines cannot be very profitable. The great obstacles to easy and remunerative cultivation are the small size of parcels, their dispersion, and their inaccessibility.

Re-striping, by doing away with these inconveniences, must have the effect of increasing the rental capacity of land, and thus raising its value.

Projects carried into effect some years ago permit of exact reasonings into the rise in value brought about by re-striping. For this purpose an estimate is made of the value of land a certain number of years after re-striping, and if possible by the same commissioners.

In the canton of St. Gall, for three projects of re-striping carried out on an area of 966 hectares, the increase in value has been calculated

1,635,000, or fr. 1,692 per hectare, and after deducting the cost of the strip, to fr. 1,165 per hectare. In Bavaria, on an area of 15,000 hectares striped between 1887 and 1899 the increase in value is fr. 345 per hectare.

M. Basler calculated in 1902 that the inconvenience of minute subdivision of land, irregularity in shape of parcels, servitudes and defective roads must represent for the canton of Aargau a minimum annual loss of one million of francs. M. Girsberger, estimating the increased value attained re-striping at fr. 500 per hectare calculates the minimum annual saving one million of francs.

These figures give a sufficient idea of the economy effected in agricultural holdings by re-striping. The utility of such measures is not merely temporary because it facilitates every kind of agricultural production. A very considerable increase in the value of the land may also be deduced from the figures given above; it justifies the legislative measures now in force, and the financial encouragement given by the cantons and by the Confederation.

#### IV. *The Social Importance of Re-distribution.*

All classes of proprietors derive benefit from re-distribution, the small proprietor however suffers most from the inconveniences of dispersion and division into minute parcels. For extremely small holdings (0.5 to 3 hectares) and for small holdings (3.1 to 10 hectares) these measures are a necessity of existence.

The small cultivator exhausts his forces by cultivating small parcels land often distant from one another. Such a division not only entails loss of time, but also considerably increases the general working expenses. Machines cannot compensate him in the same proportion as a larger proprietor for the cost of cultivation and of labour.

The object of re-striping is not to diminish the number of proprietors, nor to disperse the property, nor yet to return to the system of large estates. Re-striping is destined to be continually repeated because of the rights of succession. Its extension this constitutes a social benefit. It is well known that the cost of cultivation is greatest in small holdings, as shown in the following table drawn up from inquiries made on behalf of the Peasants' Society as to the rental capacity of agriculture.

	Small holdings	Small peasant holdings	Peasant holdings	Large peasant holdings	Large holdings	Average
	Fr.	Fr.	Fr.	Fr.	Fr.	Fr.
1910	222.83	157.11	154.03	138.25	135.71	161.22
1908-10.	185.97	154.35	143.72	143.53	151.22	154.26
Difference	+ 36.85	+ 2.76	+ 10.31	— 5.28	— 15.51	+ 6.99

As the cost of working is much greater in small holdings than in large, special inquiries were made in 1910 and the results—the degree of subdivision being taken into account—are given below.

*Conditions of the division of the land.*

Number of estates	Very unfavourable or average	Favourable or very favourable
Number of estates . . . . .	25	13
Cost of labour per hectare . . . .	532.—	442.—
Total cost per hectare . . . . .	772.—	875.—
Gross profit per hectare . . . . .	813.—	1,076.—
Net " " " . . . . .	41.—	199.—
Percentage of net profit . . . . .	0.29	3.13

Cultivation is much more intensive in estates where the grouping of parcels is favourable, the total expenses are higher and yet the cost of labour per hectare is less than where the land is much divided. The gross as well as the net returns of the estates grouped under favourable conditions are much higher than the corresponding figures where the land is much divided. The following figures showing the net returns prove incontrovertibly the great effect of the mode in which the land is divided, on the rental capacity.

Division of the land	Yield per hectare
Very unfavourable . . . . . — Fr.	43.— — 1.05 % deficit
Unfavourable . . . . . + "	35.— 0.35 %
Medium . . . . . "	124.— 1.33 %
Favourable . . . . . "	169.— 2.50 %
Very favourable . . . . . "	217.— 3.33 %

Thus re-striping especially for the small proprietor is a work of great social importance, calculated to increase his returns and to improve the conditions of his existence.

*V. Establishment of the Land Register and Re-striping.*

The division of land depends essentially upon the organisation of the land register. The first establishment of the cadastre for instance, that of the canton of Vaud, was to serve as a basis for the land tax. It was not until this idea that the cadastre of this canton was reorganised in 1807 and 1810.

The cost of survey of parcels and of the establishment of the cadastre was borne by the cantons up to January 1st, 1912. The progress made was very variable. In 1909 only seven cantons, Vaud, Neuchâtel, Genève, Fribourg, Soleure, Basel (Town) and Schaffhausen possessed a cadastre!

the whole territory. The area measured was at the same date 1,326,000 hectares, about one-third of the whole of Switzerland.

The Swiss Civil Code has made the land register the basis of transactions connected with real property, and a survey is to be made on the same basis. Of the cost of the survey of a total area of 2,974,000 hectares, 70 % will be borne by the Confederation, the rest by the cantons, communes and private individuals.

The federal Council in its message of August 27th., 1909 estimated the cost of the survey of small parcels at 45 millions of francs. According to a memorial of the Swiss Peasants' Union of the December 7th., 1909, based on the data established by the rural engineers, MM. Schüller, Girsiger and Basler, the cost of surveying is calculated at much too low a figure if the cost borne by the cantons, communes and private persons will amount at least to 50 million francs. The territory of Switzerland is divided for surveying purposes into three classes for which different calculations are made. Class II, about 1,560,000 hectares, comprises agricultural land, less a certain extent of land of small value, such as pastures and mountain slopes.

The cost of the surveying of this class is calculated as follows by the Swiss Society of Certificated Land-surveyors in a memorial of February 1st., 1910.

	Price per hectare		Paid by the Confederation
land . . . . .	25.—	39.0 millions	27.3 millions
fixing boundaries . . . . .	20.—	31.3 "	— "
registers of land and of mortgages, servitudes, etc. . .	15.—	23.4 "	— "
		<hr/>	<hr/>
Cost of surveying . . . .		93.7 millions	27.3 millions

The amount paid by the cantons, communes and private proprietors for the registration of this land is according to this estimate, 66.4 millions or an average of fr. 42.60 per hectare.

As already stated, the canton of Vaud was the first to possess a complete cadastre for its territory. It has been calculated that the preparation of a cadastre cost 6.2 millions of which fr. 2,325,000 were paid by the State and the rest by private individuals. If we calculate the amount of the expenditure in the same canton from 1780 for the establishment and guarantee of landed property ten millions cannot be considered an exaggerated figure.

According to an opinion too long and too widely spread among interested parties, landed property existed to be registered, to be guaranteed and to serve as a base for the imposition and registration of land taxes. It is time to consider landed property and its registration under their true aspects, and to think not only of preserving and guaranteeing rural prop-

erty, but also of the realisation of the true use of such property, via profitable and economical production.

Re-stripping offers the double or triple advantage of improving agriculture, diminishing the cost of enclosure and surveying, and finally of abolishing servitudes.

The saving of the expense of enclosure would often equal the cost of re-stripping. As an example by no means exaggerated, the saving in enclosure amounts to 50 % of the cost of enclosing land not re-stripped. To take as another case, the cost of fixing limits under the former conditions of property and the registration of servitudes amounts to a figure higher than the cost of the enclosure of the re-stripped land, and of the registration of it. These examples show the place taken by re-stripping in connection with the establishment of the land register under the Civil Code.

By making the revision of the land register follow re-stripping, the cadastre is seen in its true character as a national work for the advantage of agriculture. Under this condition the large sums to be spent will serve the purpose for which they are intended.

The question treated as concisely as possible under some of its aspects deserves to receive more attention. The reader will pardon us for having merely skimmed the surface of the subject. The carrying into effect of the above mentioned measures will play an important part in the economic history of the country. Switzerland will shortly benefit by re-stripping through the application of the Civil Code and the establishment of the land register. Let us hope that the work will be carried out on an extensive scale.

